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The Food Industry Center's

2000 Supermarket Annual Report

The 2000 Supermarket Panel
Annual Report

Robert P. King, Paul J. Wolfson, and Jonathan M. Seltzer

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Acknowledgments

The Supermarket Panel is an activity of The Retail Food Industry Center. Members of the research team for the 2000 Supermarket Panel were:

Project Director	Robert P. King E. Fred Koller Professor of Agricultural Management Information Systems Department of Applied Economics University of Minnesota
Project Manager	Jonathan M. Seltzer Corporate Resource, Inc. Minneapolis, Minnesota
Data Analyst	Paul J. Wolfson Assistant Director The Retail Food Industry Center University of Minnesota
Center Director	Jean D. Kinsey Director of The Retail Food Industry Center and Professor of Applied Economics University of Minnesota

Mavis Sievert, Executive Secretary of The Retail Food Industry Center, provided valuable support services. Brian Dietz, Ph.D. student and Research Assistant in the Department of Applied Economics at the University of Minnesota, assisted with the data analysis. Ellen Carlson, Principal Secretary in the Department of Applied Economics at the University of Minnesota, did the document design and layout for this report.

The Retail Food Industry Center is located at the University of Minnesota and is one of fifteen industry centers funded by the Alfred P. Sloan Foundation. Each center is at a major research university and each studies a different industry. The goal of the Sloan Foundation's Industry Center program is to foster an understanding of the basic forces contributing to American economic progress in an increasingly competitive world economy. We gratefully acknowledge the funding for the Panel from the Sloan Foundation.

Pam Schomaker from the Minnesota Center for Survey Research was Survey Manager for the 2000 Panel. Anne Hoffman and Lew Horner were Data Analysts for the Panel. We thank them and their MCSR colleagues for their outstanding work.

Finally, we thank the individual owners store managers/directors and others who participated in the 2000 Panel. By sharing their time and knowledge, they have made this unique, in-depth view of the supermarket industry at the store level possible.

The 2000 Supermarket Panel

Executive Summary

The Retail Food Industry Center established the Supermarket Panel in 1998 as the basis for ongoing study of the supermarket industry. The Panel is unique because the unit of analysis is the individual store and the same stores are tracked over time. Individual stores provide information annually on store characteristics, operations, and performance. This makes it possible to trace the impacts of new technologies and business practices as they are adopted. The Panel has two overall objectives:

1. Provide timely, useful information for the industry through benchmark reports and annual summaries.
2. Be a ready source of longitudinal, cross-section data for research on current and emerging issues.

The 2000 Panel consists of 344 stores selected at random from the nearly 32,000 supermarkets in the U.S. The Panel is a representative cross-section of the industry. Characteristics of stores in the 2000 Panel are generally quite similar to figures presented in the *67th Annual Report of the Grocery Industry* published by *Progressive Grocer* in April 2000.

In June 2000 each store in the panel received a confidential benchmark report comparing it to peer stores similar in format and size. Index scores for six key management areas – supply chain practices, human resource practices, food handling, environmental practices, quality assurance, and service offerings – were an important feature of this report. The index scores make it easier for stores to assess relative strengths and weaknesses and identify areas for increased management attention.

Key findings from the 2000 Supermarket Panel include:

- **Median annual sales growth is remarkably high for stores in ownership groups of 31 - 60 stores, 3.6% relative to growth rates of less than 2% for the other group sizes. (Table 2.2)**

- **Warehouse stores have high labor productivity and sales per square foot, but their median sales growth rate is negative. (Tables 2.3 and 9.2)**

- **Stores that place increased emphasis on supply chain and human resource practices have more efficient management of space, labor, and inventories. (Tables 3.5 and 9.2)**

- **After controlling for other factors, group size has little impact on performance. This suggests wholesaler supplied stores can be competitive. However, stores in self-distributing groups have higher inventory turns. (Table 9.2)**

- **Stores that have implemented Internet ordering have much higher median annual sales growth than stores that do not offer this service – 4.4% versus 1.7% . (Table 10.3)**

- **Stores that face supercenter competition have a median annual sales growth rate of only 0.7%, compared to a rate of 2.1% for other stores. (Table 10.4)**

Supermarket Panel 2001

Work on the 2001 Panel is already underway. In addition to the 344 stores in the 2000 Panel, 1,600 new randomly selected stores will be asked to participate. Our objective is to continue expanding the size of the Panel. This will increase the accuracy of our industry profile and make it possible to examine emerging trends in greater detail.

With a second year of data from a randomly selected panel of stores, we will be able to take full advantage of the unique capabilities the Panel offers for longitudinal analysis. We will place particular emphasis on the following questions.

- **What are the characteristics of stores that are leaders across the entire range of performance measures?**

- **What are the key determinants of labor productivity?**

- **How are food system-wide supply chain initiatives being reflected in investment and technology adoption at the store level?**

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The 2000 Supermarket Panel
Annual Report

1. Introduction

The Retail Food Industry Center established the Supermarket Panel in 1998 as the basis for ongoing study of the supermarket industry. The Panel is comprised of individual stores that provide information annually on store characteristics, operations, and performance. The Panel has two overall objectives:

1. Provide timely, useful information for the industry through benchmark reports and annual summaries.
2. Be a ready source of longitudinal, cross-section data for research on current and emerging issues.

The Panel is unique because the unit of analysis is the individual store and the same stores are tracked over time. This makes it possible to trace the impacts of new technologies and business practices as they are adopted.

The 2000 Panel consists of 344 stores selected at random from the nearly 32,000 supermarkets in the U.S. It is a representative cross-section of the industry. The information these stores have provided is the basis for the in-depth view of the industry presented here.

Key findings are summarized in the margins of each section in this report. In general, these findings highlight significant correlations among store characteristics, business practices, and performance. They should not be interpreted as cause and effect relationships.

The remainder of this report begins with a brief description of the data collection procedures for the 2000 Supermarket Panel and a descriptive profile of the participating stores, with breakdowns by size of store group, format, and location. Key findings from the descriptive profile include:

- **For three key performance measures – weekly sales per square foot, sales per labor hour, and sales per transaction – stores in large groups clearly outperform single stores. (Table 2.2)**

- **Median annual sales growth is remarkably high for stores in ownership groups of 31 - 60 stores, 3.6% relative to growth rates of less than 2% for the other group sizes. (Table 2.2)**

- **Warehouse stores have high labor productivity and sales per square foot, but their median sales growth rate is negative. (Table 2.3)**

Each participating store in the 2000 Panel received a confidential benchmark report comparing it to peer stores similar in format and selling area. Index scores for six key management areas – supply chain, human resources, food handling, environmental practices, quality assurance, and service offerings – were an important feature of the benchmark report. Sections 3 through 8 present detailed findings on store practices and performance related to these six key management areas. Key findings include:

- **Stores in larger groups are better positioned to take part in supply chain initiatives. (Tables 3.1 and 3.2)**

- **Adoption of technologies and business practices that support supply chain management initiatives is associated with superior performance at the store level. (Table 3.5)**

- **Failure to adopt moderately progressive human resource practices can adversely affect performance, but there are few clear differences in performance among stores that have achieved a basic level in this area. (Table 4.3)**

- **Stores that are part of a larger ownership group tend to place greater emphasis on quality assurance practices. (Table 7.1)**

In Section 9 we present a more comprehensive analysis of drivers for key measures of store performance, using regression analysis to measure relationships between performance and individual store characteristics while controlling for other factors. Important findings include:

- **For stores within a format, increases in selling area are associated with lower sales per square foot and sales growth and higher payroll as a percent of sales. (Table 9.2)**

- **After controlling for other factors, group size and membership in a self-distributing group have little impact on performance. This suggests wholesaler supplied stores can be competitive. However, stores in self-distributing groups have higher inventory turns. (Table 9.2)**

- **Stores that place increased emphasis on supply chain and human resource practices have more efficient management of space, labor, and inventories. (Table 9.2)**

Section 10 of this report offers a closer look at four "front burner" issues for the industry – employee turnover, self scanning, Internet ordering, and supercenter competition. Key findings include:

- **Implementation of self-scanning has been limited almost exclusively to stores in very large store groups. (Table 10.2)**

- **Stores that have implemented Internet ordering have much higher sales growth than stores that do not offer this service. (Table 10.3)**

- **Stores that face supercenter competition have a median annual sales growth rate of only 0.7%, compared to a rate of 2.1% for other stores. (Table 10.4)**

This report concludes with a brief look ahead to the 2001 Panel.

2. A Descriptive Profile of the Panel

- Characteristics of stores in the 2000 Panel are generally quite similar to figures presented in the *67th Annual Report of the Grocery Industry* published by *Progressive Grocer* in April 2000.

Data collection for the 2000 Panel began in the fall of 1999, when a random sample of 2,000 stores was drawn from a list of 31,127 supermarkets in the U.S. that accept food stamps. This list does not include convenience stores. Each store was contacted by phone to confirm the store address and the name and title of the manager, so that all subsequent communication could be addressed to the person in charge at the individual location. This could be the owner, manager, or store director, depending on the individual organization.

In early January 2000 each store manager received a letter introducing the Panel and indicating that his or her store had been selected at random for participation. The letter indicated that each participating store would receive a confidential benchmark report. This was the only incentive offered. Data booklets for the Panel were mailed to the 2,000 randomly selected stores in mid-January 2000. This mailing was followed by post card reminders and a second mailing of the data booklets to stores that had not responded. Data collection ended in mid-March 2000.[1]

Data were coded and key punched by the University of Minnesota Survey Research Center in March and April. During May and early June a confidential benchmark report was prepared for each participating store, comparing it to a group of peer stores similar in format and size.[2]

Of the 2,000 randomly selected stores, 344 returned useable data booklets. This represents an overall response rate of 17.2%. In addition, 42 of the 100 stores in the 1999 Panel returned useable data booklets. All 386 stores received benchmark reports. The 42 stores from the 1999 Panel were not included in the analysis presented in this report, however, to ensure that findings are based on a representative sample of stores.

Characteristics of stores in the 2000 Panel are similar to figures presented in the *67th Annual Report of the Grocery Industry* published by *Progressive Grocer* in April 2000. Table 2.1 compares median store characteristics for the entire U.S. from the *Progressive Grocer* report and the Supermarket Panel. Median stores from the two studies have nearly identical size and weekly sales per checkout. Panel stores have slightly lower annual sales and sales per square foot. Median sales per employee

[1] See Appendix A for a more detailed description of data collection procedures.

[2] See Appendix C for a sample benchmark report.

for the Supermarket Panel is nearly 23% higher than the figure reported by *Progressive Grocer*, but this may be due to differences in the definition of this variable.

Table 2.1. Median Store Characteristics for U.S. Supermarkets

	MEDIAN STORE CHARACTERISTICS	
CHARACTERISTIC	*Progressive Grocer*[1]	Supermarket Panel
Annual Store Sales	$11,600,000	$10,400,000
Selling Area	28,310 square feet.	28,500 square feet
Weekly Sales per Checkout	$25,033	$25,000
Weekly Sales per Square Foot	$7.88	$7.42
Weekly Sales per Full-time Equivalent Employee	$3,380	$4,154

[1] Source: *67th Annual Report of the Grocery Industry* special supplement to *Progressive Grocer*, April 2000.

Stores Grouped by Store Group Size

Consolidation of store groups was an important trend in the late 1990's. Control over a larger group of stores can be the basis for efficiency gains in procurement, distribution, advertising, employee training, and implementation of new technologies. However, the associated cost savings may be more apparent at the corporate level than in individual stores.

Table 2.2 shows median characteristics and performance measures for stores in five group size categories that range from single store independents to groups with more than 60 stores. Store group size is based on common ownership, and a group may include stores with several different names.

For almost every characteristic and performance measure, there are striking differences in stores across these group size categories. Nearly all stores in the first two groups are wholesaler supplied, as are nearly three-quarters of the stores in groups with from 11 to 30 stores. As group size increases beyond 30 stores, however, the parent company is increasingly likely to operate its own distribution system. Stores in smaller groups, especially single stores, tend to be smaller and older and are less likely to be in an metropolitan area.

Table 2.2. Descriptive Profile of the Panel for Stores Grouped by Store Group Size

	Single Store	2 -10 Stores	11 - 30 Stores	31 - 60 Stores	> 60 Stores
NUMBER OF STORES	58	83	52	26	125
STORE AND MARKET CHARACTERISTICS					
• Median Selling Area (sq. ft.)	13,500	23,000	28,500	28,500	36,996
• Median Store Age (years)	32	23	24	20	13
• Median Number of Stores in Store Group	1	4	19	44	517
• Percent Wholesaler Supplied	97	94	73	54	6
• Percent Located in an SMSA	41	52	67	61	71
MEDIAN PERFORMANCE MEASURES					
• Weekly Sales	$81,000	$144,000	$236,050	$180,357	$295,781
• Weekly Sales per Square Foot	$6.05	$6.64	$7.66	$6.39	$8.06
• Sales per Labor Hour	$83.33	$98.61	$103.93	$107.26	$113.59
• Sales per Transaction	$13.14	$16.72	$19.70	$18.66	$21.48
• Annual Inventory Turns	19.0	16.2	15.8	15.0	20.7
• Percent Employee Turnover	40.9	47.6	37.5	35.6	42.0
• Gross Profit as a Percent of Sales	22.2	23.0	22.8	22.2	24.8
• Payroll as a Percent of Sales	10.0	9.5	9.4	9.5	9.8
• Annual Percentage Sales Growth	1.4	1.6	1.9	3.6	1.8
NUMBER OF STORES BY FORMAT					
• Conventional	41	53	24	19	29
• Superstore/Upscale	2	9	9	1	29
• Food/Drug Combination	1	1	4	1	31
• Warehouse	0	6	6	2	5
• Other	5	3	2	1	10
NUMBER OF STORES BY REGION					
• Northeast	11	11	5	3	28
• Midwest	24	34	24	7	24
• South	13	22	10	9	45
• West	10	16	13	7	28

For three key performance measures – weekly sales per square foot, sales per labor hour, and sales per transaction – stores in large groups clearly outperform single stores. This overall trend holds for sales per labor hour across the intermediate group sizes, but it breaks down for weekly sales per square foot and sales per transaction. Stores in groups of 11 - 30 stores have higher sales per square foot and sales per transaction than stores in groups of 2 - 10 and 31 - 60 stores. Gross profit as a percent of sales is fairly constant across the first four group sizes but is considerably higher for stores in the largest groups, suggesting that these stores have an advantage in procurement. Payroll as a percent of sales is highest for single stores and stores in the largest groups, but is essentially constant for the intermediate group sizes. Finally, sales growth is remarkably high for stores in groups of 31 - 60 stores, relative to growth rates for the other group sizes.

- For three key performance measures – weekly sales per square foot, sales per labor hour, and sales per transaction – stores in large groups clearly outperform single stores.
- Sales growth is remarkably high for stores in groups of 31 - 60 stores, relative to growth rates for the other group sizes.
- Superstore/upscale and food/drug combination stores have solid performance in most areas, and these formats lead in median sales growth.

Turning attention to the distribution of stores by format, more than 80% of stores in the single store and 31 - 60 store categories are conventional. There is more variety with regard to format in the 2 - 10 and 31 - 60 store categories and considerably more variation in format among stores in groups of more than 60 stores.

Stores Grouped by Format

Supermarket formats are changing to better respond to customers' desire for cost savings, convenience, quality, variety, and service. Table 2.3 shows median store characteristics and performance measures for stores grouped into five format categories: conventional, superstore/upscale, food/drug combination, warehouse, and other. Stores in the "other" category include a mix of hypermarket, limited assortment, mini-club, deep discount, mass merchant, and other supermarket formats.

Relative to stores in other formats, those in the conventional and "other" categories are smaller and older. While conventional stores are the least likely to be located in a metropolitan area, those in the "other" category are highly concentrated in urban areas. Superstore/upscale and food/drug combination stores are similar in size and tend to belong to large store groups, but the food/drug combination stores are much less likely to be wholesaler supplied. Warehouse stores have the largest median selling area. Median group size is relatively small for warehouse stores.

Table 2.3. Descriptive Profile of the Panel for Stores Grouped by Format

	CON	SS/US	FD COMBO	WH	OTHER
NUMBER OF STORES	166	50	38	19	21
STORE AND MARKET CHARACTERISTICS					
• Median Selling Area (sq. ft.)	20,000	38,000	40,000	52,500	29,000
• Median Store Age (years)	25	10	12	13	24
• Median Number of Stores in Store Group	6	98	231	14	33
• Percent Wholesaler Supplied	73	40	18	53	48
• Percent Located in an SMSA	51	80	68	68	86
MEDIAN PERFORMANCE MEASURES					
• Weekly Sales	$127,000	$345,000	$315,000	$465,000	$105,000
• Weekly Sales per Square Foot	$6.61	$8.33	$8.46	$9.04	$7.17
• Sales per Labor Hour	$96.92	$106.25	$122.3	$131.02	$127.5
• Sales per Transaction	$16.77	$25.00	$23.73	$26.46	$19.67
• Annual Inventory Turns	16.0	20.4	18.7	15.9	20.0
• Percent Employee Turnover	45.2	40.7	44.3	41.6	54.4
• Gross profit as a Percent of Sales	23.0	25.0	23.5	19.25	19.0
• Payroll as a Percent of Sales	10.0	9.6	10.0	7.4	9.4
• Annual Percentage Sales Growth	2.0	3.0	2.7	(0.3)	0
NUMBER OF STORES BY STORE GROUP SIZE					
• Single Store	41	2	1	0	5
• 2 - 10 Stores	53	9	1	6	3
• 11 - 30 Stores	24	9	4	6	2
• 31 - 60 Stores	19	1	1	2	1
• > 60 Stores	29	29	31	5	10
NUMBER OF STORES BY REGION					
• Northeast	30	12	4	1	4
• Midwest	55	17	5	12	4
• South	53	10	11	3	6
• West	28	11	18	3	7

CON = Conventional
SS/US = Superstore/Upscale
FD COMBO = Food/Drug Combination
WH = Warehouse

Turning to the performance measures in the middle of the Table 2.3, conventional stores have the lowest sales per square foot and sales per labor hour. Along with food/drug combination stores, they have the highest payroll as a percent of sales, and they rank fourth out of five in inventory turns and gross profit as a percent of sales. The superstore/upscale and food/drug combination stores have solid performance in most areas, and these formats lead in median sales growth. Stores in the warehouse and other formats are noteworthy for their high median sales per labor hour, low gross margins, low payroll as a percent of sales, and lack of sales growth.

- Warehouse stores have high labor productivity and sales per square foot, but their median sales growth rate is negative.

This descriptive profile of the stores in the 2000 Supermarket Panel shows that they represent industry-wide diversity in group size, format, and regional location. In most cases when direct comparison is possible, findings for the Panel are similar to figures reported in *Progressive Grocer's Annual Report of the Grocery Industry*.

3. Supply Chain Practices

Supply chain management initiatives are having profound impacts throughout the food system. Building on the information technology infrastructure established with the introduction of scanning and electronic data interchange in the 1970s and 1980s, the Efficient Consumer Response initiative of the last half of the 1990s fostered widespread adoption of new technologies and business practices designed to eliminate inefficiencies throughout the retail food supply chain. New technologies include systems to facilitate faster transfer of product movement data and product orders, electronic assisted receiving, frequent shopper cards, and shelf-space allocation software. New business practices include vendor managed inventory, scan-based trading, and the information and decision sharing that is part of many category management programs.

In the past year, the pace of change has increased. Individual stores, store group headquarters, distributors, brokers, and manufacturers all struggled with the Y2K problem. Many responded by accelerating investments in new information technologies designed to promote additional supply chain efficiency gains. Electronic commerce also continued to emerge as a major issue, with increased emphasis placed on the development of business-to-business applications. The move from proprietary electronic data interchange (EDI) systems to web-based systems is making it easier to extend the benefits of e-commerce beyond the manufacturing plant and distribution center to the store level.

The Supply Chain score is designed to serve as an indicator of a store's ability to participate in and contribute to supply chain initiatives. This score has two equally weighted components. The **technology component** measures a store's adoption of eight store-level technologies related to supply chain management:

1. Electronic Data Interchange (EDI)
2. Electronic-assisted receiving
3. Electronic shelf tags
4. Pay-on-scan (scan-based trading)
5. Product movement analysis/Category Management
6. Scanning data used for automatic inventory refill (vendor managed inventory)
7. Shelf-space allocation plan-o-grams
8. Frequent shopper/Loyalty card program

These technologies are equally weighted, and the score for this component is simply the percent of technologies adopted.

The **decision sharing** component of the Supply Chain score measures the extent to which parties outside the store are involved in store-level decisions in five key areas:

1. Pricing
2. Advertising
3. Space allocation
4. Display merchandising
5. Promotions

Store managers were asked who has primary responsibility for decisions in each of these areas for four products: apples, dry cereal, direct store delivery (DSD) snacks, and fluid milk. The score for this component is the percent of these twenty decisions (five for each of four products) for which someone outside the store has primary responsibility.

Supply Chain Practices for Stores Grouped by Store Group Size

Table 3.1 shows median supply chain scores and technology adoption rates for stores in the five group size categories that range from single store independents to groups with more than 60 stores. The median Supply Chain score increases steadily with store group size, as does the decision sharing component. The pattern is less clear for the technology component.

Turning attention to use rates for the individual technologies listed in the lower portion of the table, rates increase steadily with store group size for electronic data interchange, electronic-assisted receiving, and the use of plan-o-grams. Trends are less consistent for the other technologies, however. In fact, single stores actually have the highest use rate for electronic shelf tags. On the other hand, stores in the largest groups have the highest rates for use of scanning data for automatic inventory refill and for pay on scan.

Table 3.1. Supply Chain Practices for Stores Grouped by Store Group Size: Technology Adoption

	Single Store	2 -10 Stores	11 - 30 Stores	31 - 60 Stores	> 60 Stores
NUMBER OF OBSERVATIONS (SC Score)	58	83	52	26	125
MEDIAN SUPPLY CHAIN SCORE	28.1	36.3	55.6	63.1	75
• Technology Component	37.5	25	37.5	50	50
• Decision Sharing Component	15	40	75	80	95
USE OF TECHNOLOGY (Percentages)					
• Electronic Data Interchange (EDI)	19	24	37	38	48
• Electronic-assisted Receiving	28	37	56	65	78
• Electronic Shelf Tags	26	13	21	19	23
• Pay on Scan	17	20	37	19	42
• Product Movement Analysis / Category Management	81	75	77	88	90
• Scanning Data Used for Automatic Inventory Refill	5	1	6	4	25
• Shelf-space Allocation Plan-o-grams	55	63	73	88	90
• Frequent Shopper / Loyalty Card Program	22	20	33	31	48

- Stores in larger groups are better positioned to take part in supply chain initiatives.

Overall, stores in larger groups are more likely to be using technologies that promote information exchange and decision sharing with parties outside the store. This is consistent with the fact that differences across store group sizes are especially large for the decision sharing component of the Supply Chain score.

- Decisions about advertising and promotions are more likely to be shared with parties outside the store than are decisions about pricing, space allocation, and display merchandising.

Table 3.2 shows how decision sharing changes across store group sizes in the five decision areas for each of the four products. Rates of decision sharing increase consistently with group size in most cases, though there are often slight downturns in decision sharing for advertising and promotions between the largest two groups sizes. Among the decision areas, it is not surprising that advertising and promotions have the highest rates of decision sharing, while display merchandising has the lowest. Among the products, the rate of decision sharing tends to be higher for DSD snacks and fluid milk.

Table 3.2. Supply Chain Practices for Stores Grouped by Store Group Size: Decision Sharing

	Single Store	2 -10 Stores	11 - 30 Stores	31 - 60 Stores	> 60 Stores
DECISION SHARING WITH PARTIES OUTSIDE THE STORE (Percentages)					
APPLES					
• Pricing	19	45	79	85	90
• Advertising	43	71	98	100	94
• Space Allocation	9	17	54	62	74
• Display Merchandising	3	13	33	35	61
• Promotions	28	49	75	92	90
DRY CEREAL					
• Pricing	41	59	90	92	94
• Advertising	43	67	98	100	94
• Space Allocation	17	25	65	85	86
• Display Merchandising	7	12	35	46	62
• Promotions	28	49	67	92	88
DSD SNACKS					
• Pricing	34	49	90	92	92
• Advertising	47	63	96	100	94
• Space Allocation	19	33	67	92	88
• Display Merchandising	16	30	38	46	65
• Promotions	34	51	69	92	90
FLUID MILK					
• Pricing	21	49	90	88	91
• Advertising	40	64	96	96	94
• Space Allocation	10	27	69	77	85
• Display Merchandising	14	11	44	46	69
• Promotions	29	48	77	85	91

Supply Chain Practices for Stores Grouped by Format

Tables 3.3 and 3.4 show detailed information on Supply Chain score components for stores grouped by format. Superstore/upscale, food/drug combination, and warehouse stores have the same median score for the technology component, while stores with conventional and other formats have slightly lower technology use rates. Superstore/upscale and food/drug combination stores have the highest scores for the decision sharing component. However, this may be due to the fact that stores in these two format groups tend to be part of larger groups rather than to some distinct feature of these formats.

Table 3.3. Supply Chain Practices for Stores Grouped by Format: Technology Adoption

	CON	SS/US	FD COMBO	WH	OTHER
NUMBER OF OBSERVATIONS (SC Score)	166	50	38	19	71
MEDIAN SUPPLY CHAIN SCORE	48.8	68.1	69.4	55	50
• Technology Component	37.5	50	50	50	37.5
• Decision Sharing Component	60	87.5	90	65	75
USE OF TECHNOLOGY (Percentages)					
• Electronic Data Interchange (EDI)	32	46	47	26	30
• Electronic-assisted Receiving	46	78	82	74	42
• Electronic Shelf Tags	19	16	13	26	31
• Pay on Scan	23	44	47	32	28
• Product Movement Analysis / Category Management	80	98	87	95	73
• Scanning Data Used for Automatic Inventory Refill	4	14	29	11	17
• Shelf-space Allocation Plan-o-grams	71	86	82	84	69
• Frequent Shopper / Loyalty Card Program	31	48	37	21	31

CON = Conventional
SS/US = Superstore/Upscale
FD COMBO = Food/Drug Combination
WH = Warehouse
OTHER = Other Format or Missing Data

Table 3.4. Supply Chain Practices for Stores Grouped by Format: Decision Sharing

	CON	SS/US	FD COMBO	WH	OTHER
DECISION SHARING WITH PARTIES OUTSIDE THE STORE (Percentages)					
APPLES					
• Pricing	54	86	87	68	63
• Advertising	78	96	95	79	70
• Space Allocation	33	68	63	47	46
• Display Merchandising	23	56	53	37	31
• Promotions	59	92	82	74	61
DRY CEREAL					
• Pricing	68	92	92	79	73
• Advertising	77	94	95	79	70
• Space Allocation	45	74	84	63	55
• Display Merchandising	25	52	61	32	35
• Promotions	58	86	79	79	59
DSD SNACKS					
• Pricing	63	90	92	68	69
• Advertising	74	94	95	84	70
• Space Allocation	49	72	84	74	62
• Display Merchandising	36	56	63	47	38
• Promotions	63	88	84	63	61
FLUID MILK					
• Pricing	58	88	92	63	70
• Advertising	72	96	95	84	70
• Space Allocation	42	72	82	58	61
• Display Merchandising	30	56	61	32	44
• Promotions	61	88	84	63	62

CON = Conventional
SS/US = Superstore/Upscale
FD COMBO = Food/Drug Combination
WH = Warehouse
OTHER = Other Format or Missing Data

Store Characteristics and Performance Measures for Stores Grouped by Supply Chain Score

Table 3.5 shows store characteristics and performance measures for stores grouped into quartiles based on the Supply Chain score. Median scores range from 19 for stores in the lowest quartile to 81 for those in the highest. The range of median scores is especially dramatic for the decision sharing component.

There are interesting differences in both market and store characteristics across the quartiles. Compared to stores in the lowest quartile, those in the highest quartile are located in areas with higher median incomes and much higher population density. Stores in the highest quartile are members of much larger store groups, are much less likely to be wholesaler supplied, and have considerably larger selling area and weekly sales. These patterns are not surprising. Location in a more densely populated area makes it easier to interact with parties outside the store, as does membership in a larger store group. Similarly, larger size makes it easier to justify investments in new information technologies, since their cost is often not sensitive to store size.

- Supply chain readiness is associated with superior store level performance.

Turning attention to the performance measures information in the lower portion of the table, increases in the Supply Chain score are associated with stronger performance in sales per labor hour, sales per transaction, inventory turns, and payroll as a percent of sales. Weekly sales per square foot is also considerably higher for stores in the upper two quartiles. On the other hand, there is no clear relationship between the Supply Chain score and sales growth, and employee turnover is actually highest for stores in the upper quartile.

In summary, supply chain initiatives have been a key issue in the industry for the past five years, and they will continue to be critical in the future. The results presented here suggest that stores in larger groups are better positioned to take part in supply chain initiatives and that readiness in this area is associated with superior performance at the store level. It is important to note, however, that the high level of correlation between group size and the Supply Chain score makes it difficult to determine which factor is actually driving better performance. The analysis of performance drivers in Section 9 helps sort out some of these influences.

Table 3.5. Average Characteristics and Performance Measures for Stores Grouped by Supply Chain Score

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
MEDIAN SUPPLY CHAIN SCORE	19	44	64	81
• Technology Component	25	31	50	75
• Decision Sharing Component	5	60	80	100
MARKET CHARACTERISTICS				
• Median Population Density (per sq. mi)	148	184	741	1174
• Median Household Income ($/year)	$32,682	$34,438	$39,172	$43,012
• Percent Located in an SMSA	49	52	63	76
STORE CHARACTERISTICS (Median)				
• Store Age (years)	13	14	11	12
• Number of Stores in Store Group	2	8	31	151
• Weekly Sales	$90,000	$141,000	$215,456	$309,000
• Selling Area (sq. ft.)	15,000	25,000	30,000	42,000
• Weekly Labor Hours	1,000	1,590	2,200	2,729
STORE CHARACTERISTICS (Percentage)				
• Wholesaler Supplied	90	76	40	19
• Union Workforce	8	25	34	53
PERFORMANCE MEASURES (Median)				
• Weekly Sales per Square Foot of Selling Area	$6.35	$6.71	$8.03	$7.80
• Sales per Labor Hour	$96.05	$96.17	$104.25	$114.29
• Sales per Transaction	$14.89	$17.33	$20.42	$22.98
• Annual Inventory Turns	15.9	17.2	18.0	20.0
• Percentage Employee Turnover	40.7	40.6	42.9	44.7
• Gross Profit as a Percent of Sales	22.0	23.0	22.8	24.9
• Payroll as a Percent of Sales	10.0	10.0	9.4	9.2
• Annual Percentage Sales Growth	0.9	2.6	2.3	1.8

4. Human Resources

With unemployment at near-record lows in most parts of the country, human resource management was a critical issue for supermarkets in 1999 and 2000. Hiring, training, retaining, and motivating employees are key challenges for store managers. Stores connect with their customers through their employees, and customers will quickly go elsewhere if they have a bad shopping experience.

The Human Resource score measures a store's adoption of progressive human resource practices. It has three equally weighted components.

1. Employee training, based on hours of training during the first twenty-six weeks of employment for new hires in cashier, deli, and other positions. This component is defined as total training hours for these three employee categories as a percent of 150 hours, with a maximum score for 100.
2. The proportion of all employees who are classified as full-time.
3. The use of incentive based compensation and several types of non-cash compensation. The score for this component reflects the opportunities store managers, department heads, other full time employees, and part time employees have to receive incentive pay. It is also based on the extent to which employees in these four categories receive the following types of non-cash compensation: employee stock ownership, individual health insurance, family health insurance, disability insurance, pension, and a 401(k) plan.

Each of the three components is scored on a 100 point scale, as is the overall index.

Human Resource Practices for Stores Grouped by Store Group Size

Table 4.1 shows median human resource scores for stores in the five group size categories that range from single store independents to groups with more than 60 stores. The median Human Resource score increases steadily, if not sharply, with store group size. However, this pattern is not consistent across the components of the Human Resource score. Median scores for the training component decline with group size, while median scores for the compensation component tend to increase.

Stores in smaller store groups devote more time to training and have a higher proportion of full time employees. But these stores are somewhat less likely to offer incentive based pay and much less likely to offer non cash benefits in their compensation practices. One explanation for this pattern is that these additional forms of compensation become more important as store owners are more remote from day-to-day operations. Another possible explanation is that stores in smaller groups are more likely to be located outside of metropolitan areas and are less likely to be unionized. Both these factors are generally associated with lower levels of non cash benefits.

- Stores in smaller store groups devote more time to training and have a higher proportion of full time employees. But these stores are somewhat less likely to offer incentive based pay and much less likely to offer non cash benefits in their compensation practices.

Table 4.1. Human Resource Practices for Stores Grouped by Store Group Size

	Single Store	2 -10 Stores	11 - 30 Stores	31 - 60 Stores	> 60 Stores
NUMBER OF OBSERVATIONS (HR Score)	38	61	39	22	89
MEDIAN HUMAN RESOURCE PRACTICES SCORE	38.6	40.9	44.3	44.8	50.9
• Training Component	50.0	49.3	45.7	41.0	40.1
• Proportion of Full-time Employees	40.0	39.7	34.8	31.3	35.9
• Compensation Component	28.4	36.3	46.9	44.7	58.8
TRAINING COMPONENT: MEDIANS					
• Cashier Training (1st 26 weeks)	24.0	20.0	21.0	24.0	20.0
• Deli Training (1st 26 weeks)	25.0	24.0	24.0	24.0	24.0
• Other Training (1st 26 weeks)	24.0	20.0	16.0	20.0	17.0
COMPENSATION COMPONENT: MEDIANS					
• Incentive Based Component	25.0	12.5	25.0	18.8	37.5
• Noncash Component	32.5	55.0	70.0	70.0	85.0

Human Resource Practices for Stores Grouped by Format

Table 4.2 shows detailed information on Human Resource score components for stores grouped by format. Conventional stores score considerably lower than stores in other format categories. Superstore/ upscale, food/drug combination, and warehouse stores are much more likely to include non cash benefits in their compensation packages. This almost certainly is a result of higher rates of unionization in these stores.

Table 4.2. Human Resource Practices for Stores Grouped by Format

	CON	SS/US	FD COMBO	WH	OTHER
NUMBER OF OBSERVATIONS (HR Score)	119	41	30	18	41
MEDIAN HUMAN RESOURCE PRACTICES SCORE	40.9	48.7	50.5	48.1	46.6
• Training Component	42.7	48.0	39.3	47.3	42.7
• Proportion of Full-time Employees	37.7	34.4	38.6	32.3	39.1
• Compensation Component	39.1	58.4	57.8	51.9	42.5
TRAINING COMPONENT: MEDIANS					
• Cashier Training (1st 26 weeks)	20.0	24.0	20.0	24.0	20.0
• Deli Training (1st 26 weeks)	24.0	24.5	20.0	25.0	24.0
• Other Training (1st 26 weeks)	18.0	20.0	17.0	22.5	20.0
COMPENSATION COMPONENT: MEDIANS					
• Incentive Based Component	25.0	25.0	31.3	37.5	18.8
• Noncash Component	57.5	85.0	80.0	80.0	60.0

CON = Conventional
SS/US = Superstore/Upscale
FD COMBO = Food/Drug Combination
WH = Warehouse
OTHER = Other Format or Missing Data

Table 4.3. Average Characteristics and Performance Measures for Stores Grouped by Human Resource Practices Score

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
MEDIAN HUMAN RESOURCE PRACTICES SCORE	32	41	49	58
• Training Component	32	46	48	66
• Proportion of Full-time Employees	30	33	37	42
• Compensation Component	30	43	56	65
MARKET CHARACTERISTICS				
• Median Population Density (per sq. mi.)	212	430	405	918
• Median Household Income ($/year)	$35,483	$37,927	$35,731	$40,833
• Percent Located in an SMSA	54	58	64	71
STORE CHARACTERISTICS (Median)				
• Store Age (years)	14	13	13	9
• Number of Stores in Store Group	4	16	33	140
• Weekly Sales	$118,000	$230,000	$210,250	$295,000
• Selling Area (sq. ft.)	21,500	30,000	27,000	36,000
• Weekly Labor Hours	1,385	2,138	2,105	2,600
STORE CHARACTERISTICS (Percentage)				
• Wholesaler Supplied	79	63	52	37
• Union Workforce	21	37	33	38
PERFORMANCE MEASURES (Median)				
• Weekly Sales per Square Foot of Selling Area	$6.46	$7.89	$7.74	$8.03
• Sales per Labor Hour	$96.00	$106.55	$104.50	$102.69
• Sales per Transaction	$16.11	$20.00	$20.12	$21.20
• Annual Inventory Turns	16.0	19.0	16.5	18.6
• Percentage Employee Turnover	45.1	44.7	41.2	37.0
• Gross Profit as a Percent of Sales	22.0	22.3	24.0	24.6
• Payroll as a Percent of Sales	10.0	9.8	9.6	9.8
• Annual Percentage Sales Growth	1.2	2.6	1.7	-0.9

Store Characteristics and Performance Measures for Stores Grouped by Human Resource Score

Table 4.3 shows store characteristics and performance measures for stores grouped into quartiles based on the Human Resource score. Median scores range from 32 for stores in the lowest quartile to 58 for those in the highest – a fairly narrow range compared to that observed for some of the other management scores. Among the components of this score, variation is lowest for the proportion of FT employees component.

- Employee turnover falls with increased adoption of more progressive human resource practices.

It is noteworthy that stores with the highest scores in this area are newer, larger, and part of larger store groups. They are more likely to be located in a metropolitan area and less likely to be wholesaler supplied. While stores in the lowest quartile for this score are less likely to be unionized, it is striking that the rate of unionization does not trend upward for the top three quartiles.

- Failure to adopt moderately progressive human resource practices can adversely affect performance, but there are few clear differences in performance among stores that have achieved a basic level in this area.

There are several interesting patterns in the lower portion of Table 4.3, which presents findings for store performance. Stores that score well in the Human Resources area have considerably higher sales per square foot, lower employee turnover, higher gross profit as a percent of sales, and somewhat lower payroll as a percent of sales. In general, it is noteworthy that stores in the lowest quartile have relatively poor performance for all performance measures, while there are few clear differences among stores in the top three quartiles. This suggests that failure to adopt moderately progressive human resource practices can adversely affect performance. Once a basic level has been achieved in this area, though, other areas may offer better opportunities for improving performance.

5. Food Handling

Food safety issues continued to be a focus of attention for consumers, retailers, and manufacturers in 1999 and 2000. Labor shortages and high employee turnover heightened concerns in supermarkets, as managers struggled with the challenge of providing excellent service to customers while ensuring that adequate time was devoted to food safety and handling training for new employees.

The Food Handling score measures a store's adoption of practices that promote food safety and quality.[3] It has the following six components, each of which is measured on a 100 point scale.

1. Target Temperatures – conformity with recommended target temperatures for self service meat, dairy products, and self service deli. Meeting standards results in a score of 100 for this component. The score falls as target temperatures are set above recommended levels.
2. Temperature Checks – conformity with recommended frequency of temperature checks for self service meat, dairy products, self service deli, and frozen foods. Meeting frequency standards results in a score of 100 for this component. The score falls as temperature check frequencies fall below recommended levels.
3. Store Sanitation Audits – conformity with recommended frequency for self audits and third party audits of store sanitation practices. Meeting frequency standards results in a score of 100 for this component. The score falls as audit frequencies fall below recommended levels.
4. Dating Information – use of "sell by" or "use by" dates for poultry, red meat, seafood, and deli products. The score for this component is the percentage of these product categories using recommended dating information.

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[3] This index was developed by Professor Ted Labuza, Department of Food Science and Nutrition, University of Minnesota. It reflects the judgement of academic and industry food scientists on the relative importance of a range of factors related to food safety.

5. Inventory Practices – conformity with recommended inventory rotation practices for meat, dairy, self-service deli, and frozen foods. Using recommended practices for all products results in a score of 100 for this component.
6. Training – provision of food safety and handling training for the deli manager, deli employees, and meat department employees. The score for this component is the percentage of these employee categories that receive food safety and handling training.

Scores for these six components are combined into an overall score on a 100 point scale.

- Stores generally achieve high scores in this area, regardless of store group size or format.

Food Handling Practices for Stores Grouped by Store Group Size

Table 5.1 shows median Food Handling scores for stores across the range of group size categories. There is no clear trend for the overall score, and there is even less variation in median scores for the individual components. It is also noteworthy that stores in all categories achieve high scores in this area.

Food Handling Practices for Stores Grouped by Format

Table 5.2 shows detailed information on Food Handling score components for stores grouped by format. Here there is more variation, with superstore/upscale and food/drug combination stores having the highest median scores. Nevertheless, median overall scores are still notably high for all formats.

Looking more closely at the components of the Food Handling score, differences are greatest for the training component. Superstore/upscale and food/drug combination stores are much more likely to have company policies that require food safety training for deli managers and employees and meat department employees.

Store Characteristics and Performance Measures for Stores Grouped by Food Handling Score

Table 5.3 shows store characteristics and performance measures for stores grouped into quartiles based on the Food Handling score. Stores in the lowest quartile have a median score considerably lower than stores in the other three quartiles. This low score is attributable primarily to poor performance in setting target temperatures for refrigerated display cases. There are no noteworthy differences in market or store

Table 5.1. Food Handling Practices for Stores Grouped by Store Group Size

	Single Store	2-10 Stores	11 - 30 Stores	31 - 60 Stores	> 60 Stores
NUMBER OF OBSERVATIONS (FH Score)	38	61	39	22	89
MEDIAN FOOD HANDLING PRACTICES SCORE	78.7	76	82.7	73.3	84.8
• Target Temperature Component	100	100	100	100	100
• Temperature Checking Component	100	100	100	100	100
• Store Audits Component	50	50	50	50	50
• Dating Information Component	100	100	100	100	100
• Inventory Practices	100	100	100	100	100
• Training	100	66.7	100	66.7	100
TARGET TEMPERATURE COMPONENT: MEDIANS					
• Self Service Meat	34	35	36	32	36
• Dairy	36	37.5	36	36	37
• Self Service Deli	36.5	37.5	37.5	35	38
TEMPERATURE CHECKING COMPONENT: MODES					
• Self Service Meat	3	3	3	3	3
• Dairy	3	3	3	3	3
• Self Service Deli	3	3	3	3	3
• Frozen	3	3	3	3	3
STORE AUDITS COMPONENT: MODES					
• Self Audit	4	4	4	4	4
• 3rd Party Commercial Audit	3	2	1	2	3
DATING INFORMATION COMPONENT: MODES					
• Poultry	2	2	2	2	2
• Red Meat	2	2	2	2	2
• Seafood	2	2	2	2	2
• Deli	2	2	2	2	2
INVENTORY PRACTICES COMPONENT: MODES					
• Self Service Meat	2	2	2	2	2
• Dairy	2	2	2	2	2
• Self Service Deli	2	2	2	2	2
• Frozen	2	2	2	2	2
TRAINING COMPONENT: PERCENTAGES					
• Deli Manager	64	63	75	81	85
• Deli Employees	49	68	79	58	85
• Meat Dept. Employees	53	43	67	54	59

Table 5.2. Food Handling Practices for Stores Grouped by Format

	CON	SS/US	FD COMBO	WH	OTHER
NUMBER OF OBSERVATIONS (FH Score)	119	41	30	18	41
MEDIAN FOOD HANDLING PRACTICES SCORE	78.7	88	90.6	79.3	69.8
• Target Temperature Component	100	100	100	100	100
• Temperature Checking Component	100	100	100	100	100
• Store Audits Component	50	50	60	50	50
• Dating Information Component	100	100	100	100	100
• Inventory Practices	100	100	100	100	100
• Training	83.3	100	100	66.7	100
TARGET TEMPERATURE COMPONENT: MEDIANS					
• Self Service Meat	35	35	35	35	36
• Dairy	36.5	36	36	38	37
• Self Service Deli	37.5	36	36	38	38
TEMPERATURE CHECKING COMPONENT: MODES					
• Self Service Meat	3	3	3	3	3
• Dairy	3	3	3	3	3
• Self Service Deli	3	3	3	3	3
• Frozen	3	3	3	3	3
STORE AUDITS COMPONENT: MODES					
• Self Audit	4	4	4	4	4
• 3rd Party Commercial Audit	1	3	3	2	2
DATING INFORMATION COMPONENT: MODES					
• Poultry	2	2	2	2	2
• Red Meat	2	2	2	2	2
• Seafood	2	2	2	2	2
• Deli	2	2	2	2	2
INVENTORY PRACTICES COMPONENT: MODES					
• Self Service Meat	2	2	2	2	2
• Dairy	2	2	2	2	2
• Self Service Deli	2	2	2	2	2
• Frozen	2	2	2	2	2
TRAINING COMPONENT: PERCENTAGES					
• Deli Manager	70	86	97	79	62
• Deli Employees	49	68	79	58	48
• Meat Department Employees	57	70	76	47	61

CON = Conventional
SS/US = Superstore/Upscale
FD COMBO = Food/Drug Combination
WH = Warehouse
OTHER = Other Format or Missing Data

Table 5.3. Characteristics and Performance Measures for Stores Grouped by Food Handling Practices Score

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
MEDIAN FOOD HANDLING PRACTICES SCORE	47	72	87	94
• Target Temperature Component	0	100	100	100
• Temperature Checking Component	100	100	100	100
• Store Audits Component	45	50	40	70
• Dating Information Component	100	100	100	100
• Inventory Practices	100	100	100	100
• Training	100	33	100	100
MARKET CHARACTERISTICS				
• Median Population Density (per sq. mi.)	306	337	322	465
• Median Household Income ($/year)	$36,932	$35,659	$34,130	$38,550
• Percent Located in an SMSA	65	59	54	58
STORE CHARACTERISTICS (Median)				
• Store Age (years)	14	12	11	13
• Number of Stores in Store Group	20	9	19	36
• Weekly Sales	$179,000	$148,500	$205,000	$260,000
• Selling Area (sq. ft.)	25,000	25,000	29,000	32,000
• Weekly Labor Hours	1,700	1,500	2,103	2,425
STORE CHARACTERISTICS (Percentage)				
• Wholesaler Supplied	57	65	59	44
• Union Workforce	33	24	32	33
PERFORMANCE MEASURES (Median)				
• Weekly Sales per Square Foot of Selling Area	$6.75	$7.08	$7.48	$7.83
• Sales per Labor Hour	$103.85	$98.77	$100.86	$107.89
• Sales per Transaction	$18.73	$18.43	$18.84	$21.31
• Annual Inventory Turns	19.0	20.0	15.0	20.0
• Percentage Employee Turnover	38.3	42.9	44.6	41.3
• Gross Profit as a Percent of Sales	22.3	22.0	24.2	23.8
• Payroll as a Percent of Sales	9.8	9.0	10.0	9.9
• Annual Percentage Sales Growth	1.5	1.4	2.4	1.9

- There are few clear patterns in store characteristics or performance across stores grouped by quartiles for this score.

characteristics across the quartiles. Similarly, there are few clear patterns for the performance measures, though stores in the lowest quartile do have low sales per square foot and sales growth.

In summary, findings for this area suggest that stores are generally achieving a high standard for food safety and handling, regardless of group size or format. This is an area where stores must perform adequately if they are to remain in business.

6. Environmental Practices

Environmental issues are receiving increased attention from consumers, who are interested in buying more environmentally friendly products and in recycling waste packaging from products purchased in supermarkets. Environmental issues are also a growing concern for store managers. With the prospect of higher energy costs in the coming year and the new complexity of energy procurement in a deregulated market, there is greater interest in energy-saving technologies for refrigeration and lighting.

The Environmental Practices score measures a store's adoption of practices that promote environmental quality. It has two equally weighted components:

- A consumer component that measures the store's offering of environmentally friendly products, organic products, and recycling services. The score for this component is the percentage of product/service offerings.
- A store operations component that measures the store's adoption of energy efficient lighting, refrigeration management, and store waste recycling. The score for this component is the percentage adoption rate for these practices.

Each component is measured on a 100 point scale, as is the overall score.

Environmental Practices for Stores Grouped by Store Group Size

Table 6.1 shows median Environmental Practices scores for stores in the five store group size categories. The overall score trends upward with store group size, as do scores for both the consumer and operations components. The same pattern holds for nearly all of the individual practices that make up this score. Differences in adoption rates are particularly large for organic products, recycling for consumers, and refrigeration management. Only for the use of store waste recycling do stores in the smallest store groups have a higher rate of adoption than those in store groups of intermediate size.

Table 6.1. Environmental Practices for Stores Grouped by Store Group Size

	Single Store	2 -10 Stores	11 - 30 Stores	31 - 60 Stores	> 60 Stores
NUMBER OF OBSERVATIONS (EP Score)	58	83	52	26	125
MEDIAN ENVIRONMENTAL PRACTICES SCORE	50	50	66.7	66.7	83.3
• Consumer Component	66.7	66.7	66.7	66.7	100
• Operations Component	33.3	33.3	66.7	50	100
CONSUMER ORIENTED PRACTICES: PERCENTAGE					
• Environmentally Friendly Products	60	73	81	54	83
• Organic Products	22	30	56	46	74
• Recycling (cans, glass, plastic)	28	30	48	46	66
OPERATIONS ORIENTED PRACTICES: PERCENTAGE					
• Energy Efficient Lighting	66	67	67	69	86
• Refrigeration Management Program	41	47	60	69	81
• Store Waste Recycling	72	72	65	65	85

- Superstore/upscale, food/drug combination, and warehouse stores have consistently higher median environmental practices adoption rates than conventional stores.

Environmental Practices for Stores Grouped by Format

Table 6.2 shows detailed information on Environmental Practices for stores grouped by format. Superstore/upscale, food/drug combination, and warehouse stores all have median overall scores of 83.3, while stores with conventional and other formats have median scores of 50. This same pattern holds for the two component scores and for adoption rates for each of the six individual practices.

- Stores with a high environmental practices adoption rate tend to be located in affluent, urban areas and are part of intermediate-sized self-distributing groups.

Store Characteristics and Performance Measures for Stores Grouped by Environmental Practices Score

Table 6.3 shows store characteristics and performance measures for stores grouped into quartiles based on the Environmental Practices score. Stores in the highest quartile have the lowest median number of stores in their store group. They are also somewhat larger and are located in areas with higher population density and median household income. They are less likely to be wholesaler supplied, more likely to have a union workforce, and more likely to be located in a metropolitan area.

Table 6.2. Environmental Practices: Medians for Stores Grouped by Format

	CON	SS/US	FD COMBO	WH	OTHER
NUMBER OF OBSERVATIONS (EP Score)	166	50	38	19	71
MEDIAN ENVIRONMENTAL PRACTICE SCORES	50	83.3	83.3	83.3	50
• Consumer Component	66.7	100	100	100	66.7
• Operations Component	33.3	100	66.7	66.7	33.3
CONSUMER ORIENTED PRACTICES: PERCENTAGE					
• Environmentally Friendly Products	68	94	89	79	66
• Organic Products	36	88	82	68	35
• Recycling (cans, glass, plastic)	41	72	53	53	37
OPERATIONS ORIENTED PRACTICES: PERCENTAGE					
• Energy Efficient Lighting	67	90	87	89	68
• Refrigeration Management Program	56	80	87	74	46
• Store Waste Recycling	70	86	92	84	68

CON = Conventional
SS/US = Superstore/Upscale
FD COMBO = Food/Drug Combination
WH = Warehouse
OTHER = Other Format or Missing Data

Shifting attention to the performance measures presented in the lower portion of Table 6.3, a higher Environmental Practices score is associated with superior performance for every measure, with the performance advantage for stores in the highest quartile being quite large in many cases. This needs to be interpreted with caution, however, since other store characteristics that are correlated with the Environmental Practices score (most notably, store format) are also associated with better performance.

Table 6.3. Average Characteristics and Performance Measures for Stores Grouped by Environmental Practices Score

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
MEDIAN ENVIRONMENTAL PRACTICES SCORE	33	67	83	100
• Consumer Component	33	67	100	100
• Operations Component	33	67	67	100
MARKET CHARACTERISTICS				
• Median Population Density (per sq. mi.)	284	182	468	1,186
• Median Household Income ($/year)	$32,095	$34,815	$38,045	$46,618
• Percent Located in an SMSA	54	46	59	82
STORE CHARACTERISTICS (Median)				
• Store Age (years)	13	12	12	10
• Number of Stores in Store Group	79	46	46	29
• Weekly Sales	$105,500	$170,000	$230,000	$315,000
• Selling Area (sq. ft.)	19,000	25,000	31,000	35,000
• Weekly Labor Hours	1,050	1,670	2,600	2,600
STORE CHARACTERISTICS (Percentage)				
• Wholesaler Supplied	79	46	46	29
• Union Workforce	10	25	36	49
PERFORMANCE MEASURES: MEDIANS				
• Weekly Sales per Square Foot of Selling Area	$6.50	$6.29	$7.63	$8.60
• Sales per Labor Hour	$98.46	$100.54	$105.24	$122.27
• Sales per Transaction	$16.26	$19.35	$20.00	$25.76
• Annual Inventory Turns	15.4	15.9	17.6	25.0
• Percentage Employee Turnover	43.9	46.6	41.0	40.0
• Gross Profit as a Percent of Sales	22.0	23.0	23.7	25.0
• Payroll as a Percent of Sales	9.7	9.6	9.8	9.6
• Annual Percentage Sales Growth	1.4	0.5	2.0	2.6

7. Quality Assurance

Quality Assurance practices can play an important role in ensuring the high quality customer service needed to retain a customer base in an increasingly competitive environment. The Quality Assurance score measures a store's adoption of quality assurance practices in three areas:

1. Formal assessment of customer satisfaction, with the score for this component being percentage adoption rate for use of customer focus groups, customer satisfaction surveys, and mystery shopper programs.
2. A marketing programs component that measures a store's emphasis on perishables excellence and strong service.
3. A food handling component is based on the score for four components of the food handling index: temperature checks, sanitation audits, inventory rotation, and food safety training.

These three equally weighted components of the quality assurance score are measured on a 100 point scale, as is the overall index.

Quality Assurance Practices for Stores Grouped by Store Group Size

- Stores that are part of a larger store group tend to place greater emphasis on quality assurance practices.

Median Quality Assurance scores for stores grouped by store group size are presented in Table 7.1. Stores in the largest store group category have a slightly higher median overall score. To a large extent, though, this is due to greater adoption of formal methods for assessing customer satisfaction. This may be due to the fact that store group management is farther removed from the individual store in large groups, making it more necessary to rely structured techniques for evaluating service quality. Alternatively, it is possible that larger store groups are more likely to use focus groups, customer satisfaction surveys, and mystery shopper programs because they can spread the fixed costs of implementing these quality assurance techniques over a larger number of stores.

Quality Assurance Practices for Stores Grouped by Format

Table 7.2 shows detailed information on Quality Assurance practices for stores grouped by format. Superstore/upscale and food/drug combination stores have the highest overall scores. Patterns are less pronounced for the three component scores and the individual practices included in them, however.

Table 7.1. Quality Assurance Practices for Stores Grouped by Store Group Size

	Single Store	2 -10 Stores	11 - 30 Stores	31 - 60 Stores	> 60 Stores
NUMBER OF OBSERVATIONS (QA Score)	55	79	50	26	120
MEDIAN QUALITY ASSURANCE PRACTICES SCORE	61	63	69	65	75
• Customer Satisfaction Component	0	25	50	50	50
• Marketing Programs Component	100	100	100	100	100
• Food Handling Component	77	74	81	71	84
USE OF INSTRUMENTS TO ASSESS CUSTOMER SATISFACTION: PERCENTAGES					
• Customer Focus Groups	19	19	33	38	51
• Customer Satisfaction Surveys	36	35	62	69	76
• Mystery Shopper Programs	26	40	63	62	84
MARKETING PROGRAMS: PERCENTAGES					
• Perishables Excellence	91	94	81	88	94
• Strong Service	84	89	90	85	95
FOOD HANDLING PRACTICES: MEDIANS					
• Temperature Check Score	100	100	100	100	100
• Sanitation Audit Score	50	50	50	50	50
• Inventory Rotation Score	100	100	100	100	100
• Food Safety Training Score	100	66.7	100	66.7	100

Table 7.2. Quality Assurance Practices for Stores Grouped by Format

	CON	SS/US	FD COMBO	WH	OTHER
NUMBER OF OBSERVATIONS (QA Score)	162	50	38	18	62
MEDIAN QUALITY ASSURANCE PRACTICES SCORE	65	75	75	63	60
• Customer Satisfaction Component	25	50	50	50	25
• Marketing Programs Component	100	100	100	100	100
• Food Handling Component	77	88	90	78	69
USE OF INSTRUMENTS TO ASSESS CUSTOMER SATISFACTION: PERCENTAGES					
• Customer Focus Groups	22	58	45	47	37
• Customer Satisfaction Surveys	48	78	66	58	56
• Mystery Shopper Programs	51	68	89	79	48
MARKETING PROGRAMS: PERCENTAGES					
• Perishables Excellence	96	100	97	63	79
• Strong Service	90	96	95	100	82
FOOD HANDLING PRACTICES: MEDIANS					
• Temperature Check Score	100	100	100	100	100
• Sanitation Audit Score	50	50	60	50	50
• Inventory Rotation Score	100	100	100	100	100
• Food Safety Training Score	83.3	100	100	66.7	100

CON = Conventional
SS/US = Superstore/Upscale
FD COMBO = Food/Drug Combination
WH = Warehouse
OTHER = Other Format or Missing Data

Store Characteristics and Performance Measures for Stores Grouped by Quality Assurance Score

Median store characteristics and performance measures for stores grouped into quartiles based on the Quality Assurance score are summarized in Table 7.3. Median scores range from 50 to 85 – a narrower range than score for most of the other management areas. The customer satisfaction component has the widest range in median scores for the three components of this scores.

- A higher score in the Quality Assurance area is associated with stronger performance in most areas, but trends across quartiles based on the Quality Assurance score are not strong for most measures.

Stores in the highest quartile tend to be located in more densely populated, affluent market areas. They are larger, members of larger store groups, and less likely to be wholesaler supplied. Stores with higher Quality Assurance scores perform better for nearly all performance measures, but differences across quartiles are not large.

To summarize, stores that are part of a larger store group tend to place greater emphasis on quality assurance practices. While a higher score in the Quality Assurance area is associated with stronger performance in most areas, trends across quartiles based on the Quality Assurance score are not strong for most measures.

Table 7.3. Characteristics and Performance Measures for Stores Grouped by Quality Assurance Practices Score

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
MEDIAN QUALITY ASSURANCE PRACTICES SCORE	50	64	74	85
• Customer Satisfaction Component	0	25	50	75
• Marketing Programs Component	100	100	100	100
• Food Handling Component	50	71	83	91
MARKET CHARACTERISTICS				
• Median Population Density (per sq. mi.)	222	288	455	771
• Median Household Income ($/year)	$34,528	$36,890	$37,592	$39,142
• Percent Located in an SMSA	51	64	58	65
STORE CHARACTERISTICS (Median)				
• Store Age (years)	12	12	16	11
• Number of Stores in Store Group	5	9	40	98
• Weekly Sales	$102,500	$158,500	$210,228	$277,000
• Selling Area (sq. ft.)	18,000	27,000	29,000	35,000
• Weekly Labor Hours	960	1,627	2,320	2,600
STORE CHARACTERISTICS (Percentage)				
• Wholesaler Supplied	78	65	46	36
• Union Workforce	15	31	44	32
PERFORMANCE MEASURES: MEDIANS				
• Weekly Sales per Square Foot of Selling Area	$6.88	$6.71	$7.66	$7.90
• Sales per Labor Hour	$97.61	$103.33	$103.21	$105.56
• Sales per Transaction	$15.85	$18.47	$19.94	$22.92
• Annual Inventory Turns	18.3	15.9	20	17
• Percentage Employee Turnover	50.7	41.2	44.7	37.8
• Gross Profit as a Percent of Sales	21.4	24.0	23.0	23.9
• Payroll as a Percent of Sales	9.4	9.9	9.8	9.6
• Annual Percentage Sales Growth	1.5	2.5	1.9	1.8

8. Service Offerings

Faced with increasingly strong competition from food-away-from-home outlets, category killers, and supercenters, many supermarkets are expanding the range of services they offer. Ultimately, the goal is to make the supermarket a one-stop destination for their time-starved customers. The key question, of course, is whether the added revenues from these services is large enough to warrant their added cost.

The Service Offerings score measures the adoption rate for thirteen services listed in Table 8.1. They range from bagging and carryout to teller banking and videos. Measured on a 100 point scale, a store's score is simply the percentage of these services that it offers.

Service Offering Scores for Stores Grouped by Store Group Size

Table 8.1 presents Service Offerings scores for stores grouped by store group size. The median score is constant across the first four group sizes but then increases appreciably for stores in the largest store group size category. There are few dramatic differences in adoption rates for individual services, with pharmacy, teller banking, and Internet ordering being the three most notable exceptions.

Service Offering Scores for Stores Grouped by Format

Service Offering scores are summarized for stores grouped by format in Table 8.2. Superstore/upscale and food/drug combination stores have the highest median scores. The superstore/upscale stores place greater emphasis on home meal replacement service, while the food/drug combination stores are more likely to offer a pharmacy, mailing services, and videos. As expected, warehouse stores have a very low adoption rate for bagging and carryout services, but they have fairly high adoption rates for home meal replacement services, pharmacy, and teller banking.

- Stores with a wide range of service offerings tend to be newer, larger and part of larger store groups.

Store Characteristics and Performance Measures for Stores Grouped by Service Offerings Score

Table 8.3 presents median store characteristics and performance measures for stores grouped into quartiles based on the Service Offerings score. Stores in the highest quartile are located in more densely populated, affluent areas. They are considerably newer and larger than stores in the other three quartiles, tend to belong to much larger store groups, and are less likely to be wholesaler supplied. Stores in the upper quartile perform better for most performance measures, but they do have

- Stores that offer a wide range of services perform better for most performance measures, but they have rather high levels of employee turnover and payroll as a percent of sales.

Table 8.1. Service Offerings for Stores Grouped by Store Group Size

	Single Store	2 -10 Stores	11 - 30 Stores	31 - 60 Stores	> 60 Stores
NUMBER OF OBSERVATIONS (SO Score)	58	83	52	26	125
MEDIAN SERVICE OFFERINGS SCORE	46.2	46.2	46.2	46.2	61.5
PERCENTAGE THAT OFFER EACH SERVICE					
• Bagging Service	95	92	81	85	87
• Carryout Service	91	84	75	85	83
• Custom Meat Cutting/Service Meats	91	78	75	77	78
• Fax Ordering by Customer	16	27	15	8	18
• Fresh Prepared Meals	69	78	79	81	88
• Hot Meals or Meal Components (HMR)	66	66	71	73	82
• HMR Meals – Special Checkout Lane	14	20	17	15	26
• Internet Ordering by Customer	2	6	4	8	16
• Pharmacy, Prescriptions	12	16	23	38	58
• Post Office, Mailing Services	21	34	33	35	26
• Teller Banking/In-store Banking	17	18	29	23	44
• Video Department	26	20	21	31	39
• Strong Service Featured in Store Marketing Program	14	14	23	27	36

a rather high level of employee turnover and have the highest payroll as a percent of sales. Overall, it appears that expansion of service offerings has been worthwhile for larger stores, but this may be a more difficult strategy for small, older stores in less attractive markets.

Table 8.2. Service Offerings for Stores Grouped by Format

	CON	SS/US	FD COMBO	WH	OTHER
NUMBER OF OBSERVATIONS (SO Score)	166	50	38	19	71
MEDIAN SERVICE OFFERINGS SCORE	46.2	61.5	61.5	46.2	46.2
PERCENTAGE THAT OFFER EACH SERVICE					
• Bagging Service	97	94	92	21	80
• Carryout Service	92	90	92	16	75
• Custom Meat Cutting/Service Meats	80	86	92	53	77
• Fax Ordering by Customer	20	22	18	11	15
• Fresh Prepared Meals	77	98	95	89	68
• Hot Meals or Meal Components (HMR)	69	94	82	79	62
• HMR Meals – Special Checkout Lane	15	36	18	26	21
• Internet Ordering by Customer	5	22	16	0	7
• Pharmacy, Prescriptions	15	54	79	53	32
• Post Office, Mailing Services	27	22	39	42	28
• Teller Banking/In-store Banking	18	54	47	58	21
• Video Department	23	32	53	32	27
• Strong Service Featured in Store Marketing Program	23	38	26	21	18

CON = Conventional
SS/US = Superstore/Upscale
FD COMBO = Food/Drug Combination
WH = Warehouse
OTHER = Other Format or Missing Data

Table 8.3. Characteristics and Performance Measures for Stores Grouped by Service Offerings Score

	Lowest Quartile	Second Quartile	Third Quartile	Highest Quartile
MEDIAN SERVICE OFFERINGS SCORE	31	46	54	69
MARKET CHARACTERISTICS				
• Median Population Density (per sq. mi)	330	281	349	995
• Median Household Income ($/year)	$31,404	$35,723	$37,363	$44,874
• Percent Located in an SMSA	61	52	57	78
STORE CHARACTERISTICS (Median)				
• Store Age (years)	12	15	13	6
• Number of Stores in Store Group	8	14	14	146
• Weekly Sales	$95,000	$151,000	$187,526	$350,000
• Selling Area (sq. ft.)	18,000	24,750	29,250	45,000
• Weekly Labor Hours	980	1,800	1,984	3,100
STORE CHARACTERISTICS (Percentage)				
• Wholesaler Supplied	66	62	55	35
• Union Workforce	24	25	28	46
PERFORMANCE MEASURES: MEDIANS				
• Weekly Sales per Square Foot of Selling Area	$6.50	$7.70	$7.04	$7.83
• Sales per Labor Hour	$102.81	$100.00	$99.07	$105.08
• Sales per Transaction	$16.10	$19.09	$18.64	$23.82
• Annual Inventory Turns	16.3	19.0	17.0	19.0
• Percentage Employee Turnover	49.6	41.2	40.2	44.7
• Gross Profit as a Percent of Sales	21.8	22.0	24.0	24.2
• Payroll as a Percent of Sales	9.0	9.9	9.8	10.0
• Annual Percentage Sales Growth	1.3	2.2	1.8	2.0

9. Statistical Analysis of Performance Drivers

The descriptive profile of the Panel and the analysis of store characteristics and performance for each of the six key management areas provide useful insights on the structure of the supermarket industry and factors associated with strong performance. But exploring the data from a series of unidimensional perspectives ignores the fact that performance is ultimately the product of complex interactions among store and market characteristics and management strategies and practices.

This section presents findings from a multivariate regression analysis of five key performance measures.

1. Weekly Sales per Square Foot
2. Sales per Labor Hour
3. Annual Inventory Turns
4. Payroll as a Percent of Sales
5. Annual Percentage Sales Growth

Each of these measures was regressed on independent variables that can be grouped into four broad sets of performance drivers.

1. **Market Characteristics** include population density and median household income in the zip code where the store is located and a binary (i.e., zero/one) variable that is set to one if the store is in a metropolitan area (SMSA) and zero otherwise. These are factors that cannot be changed once a store has been built, but it is important to control for them because they can have important influences on store performance.

2. **Store Characteristics** include store selling area, a set of binary variables for alternative formats (superstore/upscale, food/drug combination, and warehouse, with conventional being considered as the "base case"), store group size, a binary variable that is set to one if the store is part of a self-distributing group and zero otherwise, and a binary variable set to one if the store has a union workforce and zero otherwise. Although it may be difficult, if not impossible, for a store manager to change store characteristics in the short run, it is important to control for these factors in analyzing store performance. Also quantifying the effects of these variables can be useful in "what-if" analyses of the effects of store group mergers or a shift to a union workforce.

3. **Competitive Strategy** performance drivers include binary variables indicating whether the manager identifies the store as a price leader, quality leader, service leader, and/or variety leader. These strategies are not mutually exclusive – a store could be both quality and service leader, for example. Also, they are not fully under the manager's control, since a new competitor could take away leadership in one or more areas. Nevertheless, it is useful to examine how a store's competitive strategy and position in each of these areas is associated with alternative performance dimensions.

4. **Management Practices** are summarized by the store's scores for the six key management areas: supply chain, human resources, food handling, environmental practices, quality assurance, and service offerings. These are performance drivers that can be affected by conscious management decisions, either at the store level or in store group headquarters.

Table 9.1 presents summary information on all the variables in this analysis, along with variable name abbreviations used in subsequent tables. All twenty explanatory variables were included in the regression analysis for each of the five performance measures. With so many variables in the analysis, there were often missing values. In fact, only sixty-two stores had valid responses for all performance measures and all explanatory variables. Therefore, two sets of regressions were run. The first used only the sixty-two stores with no missing values. The second used as many stores as possible for each performance regression. Complete results for both sets of regressions are presented in Appendix B.

Table 9.2 summarizes qualitative results for the regressions with as many observations as possible for each performance measure. Each performance measure is associated with a column in the table, while each explanatory variable is associated with a table row. When the regression coefficient for an explanatory variable is statistically significant at the 90% confidence level, two pluses or minuses are placed in the appropriate performance variable column to indicate the sign of the coefficient. One plus or minus indicates statistical significance at the 80% confidence level. For example, the relationship between population density and sales per square foot is positive and statistically significant at the 90% level, so there are two pluses in the cell at the intersection for the row and column for these variables.

Table 9.1. Summary Information for Explanatory Variables in Store Performance Analysis

Variable	Abbreviation	Comments
MARKET CHARACTERISTICS		
• Population Density (per sq. mi))	PopDen	Based on Census data
• Median Household Income ($/year)	HHInc	Based on Census data
• Located in an SMSA	SMSA	1 if SMSA, 0 otherwise
STORE CHARACTERISTICS		
• Selling Area (sq. ft.)	SellSize	
• Superstore/Upscale	US	1 if US, 0 otherwise
• Food/Drug Combination	FD	1 if FD, 0 otherwise
• Warehouse	WH	1 if WH, 0 otherwise
• Store Group Size	GSize	
• Self Distributing Group	SelfDist	1 if SelfDist, 0 otherwise
• Union Workforce	Union	1 if Union, 0 otherwise
COMPETITIVE STRATEGY		
• Price Leader	PLeader	1 if PLeader, 0 otherwise
• Quality Leader	QLeader	1 if QLeader, 0 otherwise
• Service Leader	SLeader	1 if SLeader, 0 otherwise
• Variety Leader	VLeader	1 if VLeader, 0 otherwise
MANAGEMENT PRACTICES		
• Supply Chain Score	SCScr	Scale from 0 to 100
• Human Resources Score	HRScr	Scale from 0 to 100
• Food Handling Score	FHScr	Scale from 0 to 100
• Environmental Practices Score	EPScr	Scale from 0 to 100
• Quality Assurance Score	QAScr	Scale from 0 to 100
• Service Offerings Score	SOScr	Scale from 0 to 100

Table 9.2 Qualitative Results for Performance Driver Regressions[1]

Explanatory Variable[2]	Weekly Sales per Square Foot	Sales per Labor Hour	Annual Inventory Turns	Payroll as a Percent of Sales	Annual Percentage Sales Growth
MARKET CHARACTERISTICS					
• PopDen	++	++	– –		++
• HHInc			–		++
• SMSA	+		+	– –	
STORE CHARACTERISTICS					
• SellSize	– –			++	– –
• US	++				
• FD	+		– –		
• WH	++	++	– –	– –	– –
• GSize					– –
• SelfDist			++		
• Union	++	++	++		
COMPETITIVE STRATEGY					
• PLeader	++	+		– –	++
• QLeader			++		++
• SLeader	++				–
• VLeader					
MANAGEMENT PRACTICES					
• SCScr	++			– –	
• HRScr	+		++		– –
• FHScr					
• EPScr		+	– –		
• QAScr			– –		
• SOScr				+	

[1]The symbol "++" indicates a positive relationship that is statistically significant at the 90% confidence level, while the symbol "– –" indicates a negative relationship that is statistically significant at the 90% confidence level. The symbold "+" and "–" indicate positive and negative relationships that are statistically at the 80% confidence level.

[2]See Table 9.1 for full variable names and variable definitions.

Looking more closely at the results for each performance measure, it is important to keep in mind that regression results measure statistical association between variables, while controlling for all other factors. Also, they indicate correlation but not causation. Only with multiple years of data for the same stores will it be possible to attribute a change in performance to a change in store characteristics or management practices.

Weekly Sales per Square Foot

This measure is higher in markets with higher population density that are located in an SMSA. It is also significantly higher for stores with a union workforce and for stores that identify themselves as price and service leaders.

- Within any format increases in selling area have a significant negative association with sales per square foot.

Relative to conventional stores, which are treated as the base format in this analysis, stores in the other three major format categories have significantly higher sales per square foot. In general, stores in these formats are larger than conventional stores. Within any format, however, increases in selling area have a significant negative association with sales per square foot.

Of the six management area scores, supply chain and human resource practices have statistically significant, positive relationships with weekly sales per square foot. This suggests that added attention to these areas may help stores make better use of space.

Sales per Labor Hour

This measure of labor efficiency is significantly higher in markets with higher population density and in stores with a warehouse format and a union workforce. It also tends to be higher for stores that identify themselves as price leaders and stores that have higher environmental practice scores.

These results are consistent with expectations, but the relatively small number of statistically significant performance drivers suggests that factors outside the scope of this analysis, such as the "people skills" of the store manager, may have important impacts on this performance dimension.

Annual Inventory Turns

Efficiency in managing inventory is strongly linked to market characteristics, being negatively associated with population density and household income and positively associated with location in an SMSA. Among the store characteristics, being part of a self distributing group and having a union workforce have significant, positive associations with inventory turns. All other factors held constant, food/drug combination and warehouse stores have lower inventory turns. The result for warehouse stores is somewhat surprising. One possible explanation that cannot be tested with our data is that these stores make greater use of "buying-on-deal" procurement practices that might lead to higher inventory levels.

- Being part of a self distributing group and having a union workforce have significant, positive associations with inventory turns.

Turning to the competitive strategy and management practice variables, quality leadership and a higher human resource score have statistically significant, positive relationships with annual inventory turns, while higher environmental practice and quality assurance scores have significant negative relationships.

Payroll as a Percent of Sales

This is the only one of the five performance measures that stores try to minimize rather than maximize. Among the market and store characteristics, then, the statistically significant, negative relationships for location in an SMSA and the warehouse format imply better performance in this area. On the other hand, holding other factors constant, payroll as a percent of sales tends to increase with store selling area.

- A higher level for the supply chain score has a statistically significant, negative relationship with payroll as a percent of sales, suggesting that adoption of supply chain management technologies and business practices improves labor efficiency.

Among the management practices, a higher level for the supply chain score has a statistically significant, negative relationship with payroll as a percent of sales, suggesting that adoption of supply chain management technologies and business practices improves labor efficiency. On the other hand, it is not surprising that offering a wider range of services (implying a higher service offerings score) is associated with higher levels of payroll as a percent of sales.

Annual Percentage Sales Growth

Sales growth is generally higher for stores located in areas with higher population density and household income. All other factors being equal, sales growth is significantly lower for stores with larger selling area and stores that belong to larger store groups. Finally, relative to conventional stores, sales growth is significantly lower for warehouse stores.

- Market characteristics have important impacts on all dimensions of performance. In general, stores in more densely populated metropolitan areas perform better.

Stores that identify themselves as price and quality leaders have significantly higher sales growth rates, while service leadership is associated with significantly lower sales growth. Finally, among the management practices, only the human resource score has a statistically significant relationship with sales growth, and it is negative. Overall, these results suggest that sales growth may be driven more strongly by a store's environment than by the choice of management practices.

Results Across Performance Measures

While the regression analysis is designed to measure the effects of the performance drivers on one performance measure at a time, it is also useful to look at the qualitative results across performance measures. For example, market characteristics clearly have important impacts on all dimensions of performance. In general, stores in more densely populated metropolitan areas perform better.

- There are few significant links between group size and membership in a self distributing group and the five performance measures. This suggests that wholesaler supplied stores that operate independently or belong to a small group can be competitive.

- There are significant, positive relationships between presence of a union workforce and sales per square foot, sales per labor hour, and inventory turns.

There are several interesting patterns for store characteristics. It is noteworthy that larger selling area within a particular format is associated with weaker performance for three of the five measures. This points to the critical importance of using space effectively. There are few significant links between group size and membership in a self distributing group and the five performance measures. This suggests that wholesaler supplied stores that operate independently or belong to a small group can be competitive. It is important to remember, though, that stores belonging to large groups may enjoy significant advantages in procurement that are not considered in this analysis. Finally, the significant, positive relationships between presence of a union workforce and sales per square foot, sales per labor hour, and inventory turns are also important, as is the lack of a statistically significant relationship between unionization and payroll as a percentage of sales. While labor costs are usually higher with unionization, these results suggest there are also offsetting gains in efficiency.

Among the competitive strategies, price and quality leadership have the strongest links to superior performance, indicating that strategic planning efforts should focus on building strength along these dimensions. Finally, among the management areas, emphasis on supply chain and human resource practices has the most significant link to strong performance.

10. A Closer Look at Key Issues

In this section we take a closer look at four issues of concern to many in the supermarket industry:

1. Employee Turnover
2. Self-Scanning
3. Internet Ordering
4. Supercenter Competition

Our analysis illustrates the value of insights that can be drawn from the detailed store-level data that is unique to the Supermarket Panel.

Employee Turnover

- While lowering employee turnover is important, focusing on this single aspect of human resource management is not a key for improving store performance.

Employee turnover is costly in terms of time and resources for training new hires and lost sales due to poor execution when a store is short-handed. On the other hand, it may be difficult to avoid turnover in the dynamic labor market many stores face.

How is employee turnover linked to performance at the store level? Thirty-one stores with unusually low employee turnover rates were identified and compared to the rest of the Panel. Table 10.1 summarizes store characteristics and performance levels for these two groups.

Stores in the low-turnover group have a median annual employee turnover rate of only 9.2%, compared to 46.6% for other stores. On average, stores in the low-turnover group have smaller selling area, are less likely to have a union workforce, and belong to smaller store groups. Differences in the number of employees and the human resource score are small.

Stores in the low-turnover group have a higher median for weekly sales per square foot, but they do not perform as well as other stores for the other four measures. Therefore, very low employee turnover does not appear to be a key to superior performance. In fact, there is likely to be some intermediate level for employee turnover at which overall performance is best.

Table 10.1. Store Characteristics and Performance for Stores Grouped by Employee Turnover

	Low-Turnover Stores	Other Stores
NUMBER OF STORES	31	229
STORE CHARACTERISTICS (Median)		
• Percent Annual Employee Turnover	9.2	46.6
• Selling Area (sq. Ft.)	20,000	30,000
• Group Size	19	24
• Number of Full Time Employees	23	25
• Number of Part Time Employees	40	45
• Human Resource Score	44.3	46.0
• Percent with Union Workforce	26.7	32.2
STORE PERFORMANCE LEVELS (Median)		
• Weekly Sales per Square Foot	$8.48	$7.63
• Sales per Labor Hour	$100.17	$103.97
• Annual Inventory Turns	17.0	18.1
• Payroll as a Percent of Sales	10.1	9.58
• Annual Percentage Sales Growth	1.1	1.8

Self-Scanning

Self-scanning is a new technology that, if implemented properly, may help retailers reduce labor costs while adding convenience for consumers. Twenty-seven Panel stores offer self-scanning. Table 10.2 contrasts these stores to the many more that do not offer self-scanning.

Stores that offer self-scanning have larger median selling area, belong to much larger store groups, and are located in more affluent areas than the average store that does not offer this service. Relative to other stores in the Panel, those that offer self-scanning have considerably higher median levels for sales per square foot and sales per labor hour and inventory turns and slightly higher sales growth. Their median payroll as a percent of sales is a bit higher than the median for other stores.

Table 10.2. Store Characteristics and Performance for Stores Grouped by Use of Self-Scanning

	Self-Scanning	No Self-Scanning
NUMBER OF STORES	27	306
STORE CHARACTERISTICS (Median)		
• Selling Area	48,500	26,000
• Group Size	800	14
• Median Household Income	$46,974	$36,313
STORE PERFORMANCE LEVELS (Median)		
• Weekly Sales per Square Foot	$7.80	$7.17
• Sales per Labor Hour	$118.75	$101.25
• Annual Inventory Turns	25.5	17.1
• Payroll as a Percent of Sales	9.95	9.65
• Annual Percentage Sales Growth	1.9	1.7

- Implementation of self-scanning has been limited almost exclusively to stores in very large store groups.

These results suggest that experiments with self-scanning have been largely limited to stores that belong to very large groups. Results presented earlier in the Descriptive Profile show that these stores generally have stronger sales per square foot, sales per labor hour, and inventory turns, so the performance differences reported here cannot at this time be attributed solely to self-scanning. This is a technology to watch in the coming year. Key questions will be:

- Will stores in smaller groups begin to adopt self scanning?
- Are there clear performance gains that can be attributed to self-scanning?

Internet Ordering

Supermarkets face increased competition from Internet-based home shopping services. While no company has been able to demonstrate that they have developed a verifiably profitable business model for Internet-based home grocery shopping, sales volumes are growing and most observers believe this will become a significant segment of the market. Many believe a "bricks and clicks" strategy that links Internet ordering with a traditional store can be successful.

Thirty stores in the panel offer Internet ordering. Table 10.3 compares these stores to the 306 that do not offer this service.

Stores that offer Internet ordering have larger median selling area, belong to larger store groups, and are located in more affluent areas than the average store that does not offer this service, but differences in these key indicators are much less pronounced than they were for the analysis of self-scanning. Turning to the performance measures, stores that offer Internet ordering have notably higher median sales per square foot and sales growth than other stores in the Panel. Differences are less pronounced for the other measures.

- Stores that have implemented Internet ordering have much higher sales growth than stores that do not offer this service.

Better utilization of space and higher sales growth are just the results one would expect under a successful implementation of Internet ordering, since virtual shopping makes it possible to serve more customers without added pressure on existing store selling area. This is another technology to watch in the coming year. It may be useful to follow up with stores that offer Internet ordering in order to learn more about the technologies and business practices they are using.

Table 10.3. Store Characteristics and Performance for Stores Grouped by Use of Internet Ordering

	Internet Ordering	No Internet Ordering
NUMBER OF STORES	30	306
STORE CHARACTERISTICS (Median)		
• Selling Area	35,000	27,000
• Group Size	100	15
• Median Household Income	$39,862	$36,666
STORE PERFORMANCE LEVELS (Median)		
• Weekly Sales per Square Foot	$8.79	$7.06
• Sales per Labor Hour	$107.60	$101.85
• Annual Inventory Turns	17.0	17.6
• Payroll as a Percent of Sales	10.0	9.58
• Annual Percentage Sales Growth	4.4	1.7

Supercenter Competition

Supercenters have been recognized as a major competitive force in the supermarket industry for nearly a decade, and the pace of supercenter expansion into new markets has increased. Fifty-one stores in the Panel identified a supercenter as one of their major competitors. Table 10.4 compares these stores to the 293 that do not currently report facing supercenter competition.

Table 10.4. Store Characteristics and Performance for Stores Grouped by Competition with Supercenters

	Supercenter Competition	No Supercenter Competition
NUMBER OF STORES	**51**	**293**
STORE CHARACTERISTICS (Median)		
• Selling Area	27,750	28,000
• Group Size	12	20
• Median Household Income	$34,799	$37,361
STORE PERFORMANCE LEVELS (Median)		
• Weekly Sales per Square Foot	$6.88	$7.60
• Sales per Labor Hour	$99.35	$103.15
• Annual Inventory Turns	16.5	18.2
• Payroll as a Percent of Sales	10.0	9.65
• Annual Percentage Sales Growth	0.1	2.1

Stores with supercenter competition differ little from other stores. They belong to slightly smaller store groups and are located in slightly less affluent areas. Median performance for stores that face supercenter competition, however, is worse for each of the five measures presented here. Differences for sales per labor hour and payroll as a percent of sales are relatively small but still important in percentage terms.

Percentage differences in sales per square foot and inventory turns are much larger, and the difference in sales growth rates is especially striking. Together these results provide clear quantitative evidence of the significant effect supercenter competition can have.

In future years, more stores in the Panel will face supercenter competition. Following the same stores over time, will make it possible to more accurately quantify the short-run and longer term effects of this important competitive force in the supermarket industry.

- Stores that face supercenter competition have a median annual sales growth rate of only 0.7%, compared to a rate of 2.1% for other stores.

11. Looking Ahead to the 2001 Panel

Work on the 2001 Panel is under way as this report is being completed. In addition to the 344 stores in the 2000 Panel, an additional 1,600 randomly selected stores will be asked to participate. Our objective is to continue expanding the size of the Panel. This will increase the accuracy of our industry profile and make it possible to examine emerging trends in greater detail.

With a second year of data from a randomly selected panel of stores, we will be able to more fully take advantage of the unique capabilities the Panel offers for longitudinal analysis. We will place particular emphasis on the following questions.

- **What are the characteristics of stores that are leaders across the entire range of performance measures?** In addition to our statistical analysis of performance drivers, we will look more closely at a group of twenty to thirty stores that are truly outstanding in all areas.

- **What are the key determinants of labor productivity?** Increasing labor productivity is a perennial challenge for store managers. We believe we can improve our human resource scorecard and use it to gain new insights on strategies for increasing labor productivity.

- **How are food system-wide supply chain and e-commerce initiatives being reflected in investment and technology adoption at the store level?** Full implementation of system-wide efforts in supply chain management and e-commerce will require new front-end and backroom information technology in supermarkets. We will track the adoption process and will examine the linkages between new technologies and store performance.

Appendix A
Data Collection Procedures

Sampling Procedures

Data collection for the 2000 Supermarket Panel began in the fall of 1999 with establishment of the sampling frame and drawing of a random sample of stores from that frame.

The process began with a computer file provided by the Food Stamp Program of USDA, which lists the 166,854 establishments in the United States that accept food stamps. The data fields for each store were:

- Name of Establishment
- Street Address
- City
- State
- Zip Code
- Area Code
- Phone Number
- Open 24 Hours
- Not Open 24 Hours
- Type of Establishment

Of the 166,854 establishments, 31,127 were classified as supermarkets. These became the relevant population for the Panel.

Based on experience in 1999, when the Panel was tested with a group of 100 non-randomly selected stores, we expected response rates to vary with store group size. Single store independents and stores in smaller groups were expected to have a higher response rate than those in larger groups. To ensure representation in the Panel from stores in all group sizes, the population was grouped into five store group size strata. Stores in strata associated with larger group sizes were sampled more intensively.

The first step in the stratification process was to sort 31,127 supermarkets in the population by establishment name. In cases where several store names were known to be under common corporate ownership, the stores with these names were combined into a single group. Similarly, when stores with the same name were known to be

independently owned and operated, stores with those names were classified as belonging to single store groups. Strata definitions, strata sizes, and sample sizes for each strata are reported in Table A.1. The overall sample size was 2,000 stores.

Table A.1. Strata Definitions, Sizes, and Sample Sizes

Stratum Definition	Stratum Size	Sample Size
1 store	7,724	250
2-10 stores	3,729	250
11-30 stores	1,845	250
31-60 stores	1,132	334
More than 60 stores	16,697	916

Data Collection Procedures

Data collection, coding, and entry were administered and performed by the University of Minnesota Center for Survey Research (CSR). This helped ensure not only smooth operations during a complex data collection process but also strict confidentiality for the Panel data.

The data collection process was based on mail survey methods developed by Dillman.[1] It began in November 1999, when CSR personnel called each of the 2,000 randomly selected stores to ascertain the store name and address get the store manager's name and title. This helped reduce mailing errors and made it possible to address Panel correspondence directly to the store manager.

In late December 1999, personal letters were mailed to the Chief Executive Officers of the forty largest store groups. These letters introduced the Panel, noted that stores owned by the company were likely to have been chosen at random in the sampling process, and asked that stores be encouraged to complete and return the panel data booklet.

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[1] Dillman, Don A. *Mail and Telephone Surveys: The Total Design Method.* New York: Wiley, 1978.

On January 12, 2000 letters were mailed to all 2,000 randomly selected stores and to the 100 stores that had participated in the Pilot test of the Panel. These letters introduced the Panel, indicated that the Panel data booklets would be mailed the following week, and asked for a prompt response.

On January 19, 2000 panel data booklets were mailed to all the stores in the sample with a cover letter encouraging participation and a return envelope addressed to the Center for Survey Research. Two weeks later, on February 2, 2000, a follow-up postcard was sent to all stores in the sample. Then on February 9, 2000, a second data booklet and cover letter were mailed to all stores that had not yet responded. Data collection ended in early March.

Response rates are presented by stratum in Table A.2. In addition, forty-two of the 100 non-randomly selected stores that participated in the pilot test returned completed data booklets.

Table A.2. Response Rates by Stratum

Stratum	Sample Size	Responses	Response Rate %
1 store	250	65	26.0
2-10 stores	250	59	23.6
11-30 stores	250	40	16.0
31-60 stores	334	48	14.4
> 60 stores	916	132	14.4
Total	2,000	344	17.2

The five strata are the basis for groupings by store group size in the main body of this report. In some cases a store's response to the question asking for the number of stores in its store group differed from the stratum assignment made prior to data collection. Groupings elsewhere in this report are based on the actual response by the store manager.

Data Coding and Analysis

Data were coded in late March and early April 2000 by CSR personnel. In late April 2000 Paul Wolfson, Assistant Director of The Retail Food Industry Center received the data in electronic form and began preparing

confidential benchmark reports for all the stores in the Panel. To ensure confidentiality, he was the only person outside of CSR who had access to the full data set while the benchmark reports were being prepared. All store names, addresses, and zip codes were then removed from the data set used by others in The Retail Food Industry Center who participated in the preparation of this report.[2]

During the preparation of this report, U.S. Census data based on zip code were acquired for all 2,000 stores in the random sample. These data were merged with the original data set by Paul Wolfson, who subsequently removed all store identifiers from the data files used by other researchers.

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[2] Paul Wolfson left The Retail Food Industry Center in August 2000. After that time, Robert King was the only Center affiliate who had access to the data set that included store names and addresses.

Appendix B
Performance Driver Regression Analysis Results

Multiple linear regression models for the analysis of drivers for key performance variables were estimated using *Stata*, Release 6.0.[1] For simplicity and ease of interpretation, the specification was limited to a simple linear model with no interactions among explanatory variables. Qualitative findings were similar for a preliminary analysis using natural logs of the dependent variables and the continuous explanatory variable.

Two regression models were estimated for each performance measure. For the first, the sample was restricted to those stores with valid data for all five performance measures and all twenty explanatory variables. Only sixty-two stores meet this restriction. For the second model , the sample included all stores with valid data for the performance measure under consideration and for all twenty explanatory variables. With such a large number of explanatory variables, this is still quite restrictive, but sample sizes do go up appreciably for most of the performance measures. For example, the unrestricted sample for Weekly Sales per Square Foot is 141.

When results differ appreciably for the two regressions, the stores that are eliminated from the restricted sample analysis due to missing data may differ from stores in the base sample in some important, systematic way. A statistical test developed by Hausman can be used to test for significant differences between model results for the restricted and unrestricted samples.[2] Values for the test statistic are reported after the unrestricted sample results for each performance measure. A large value of the test statistic suggests that there is a statistically significant difference between results from the two models.

A difference between results for the restricted and unrestricted samples does not invalidate the results of either model, but it does suggest the need for some caution in interpretation. In the body of this report, we base our discussion of qualitative findings on the unrestricted sample results, since they draw on data for a larger proportion of the stores in the Panel.

Finally, a word on interpretation of the estimated coefficients may be helpful. In general each coefficient indicates the change in the performance measure associated with a one unit increase in the associated explanatory variable, holding all other explanatory variables constant. For example, looking at the restricted sample results for Weekly Sales per Square Foot in Table B.1, the coefficient for **SellSize** (store selling area) is **-0.000168**. This implies a very small reduction in Weekly Sales per Square Foot with a one square foot increase in selling area, or a $0.168 reduction with a 1,000 square foot increase in selling area. The coefficient for **US** (binary variable for superstore/upscale format) is **3.92**. This implies that, relative to a conventional format store with all other characteristics and practices identical, a superstore/upscale store is expected to have Weekly Sales per Square Foot that is $3.92 higher.

[1] StataCorp. *Stata Statistical Software: Release 6.0*. College Station, TX: Stata Corporation, 1999.

[2] Hausman, J.A. "Specification Tests in Econometrics." *Econometrica* 46(1978):69-85. Use of this test was suggested by Paul Glewwe, Department of Applied Economics, University of Minnesota.

Table B.1. Weekly Sales per Square Foot, Restricted Sample

Source	SS	df	MS	Number of obs	62
Model	414.4742	20	20.7237122	F(20, 41)	2.71
Residual	313.1067	41	7.63674978	Prob > F	0.0034
				R-squared	0.5697
Total	727.581	61	11.9275571	Adj R-squared	0.3597
				Root MSE	2.7635

	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
PopDen	0.00049	0.000427	1.147	0.258	-0.0003728	0.0013533
HHInc	-1.41E-05	5.32E-05	-0.265	0.792	-0.0001215	0.0000933
SMSA	1.403381	1.339662	1.048	0.301	-1.302121	4.108882
SellSize	-0.000168	5.25E-05	-3.199	0.003	-0.0002741	-0.0000619
US	3.920239	1.352689	2.898	0.006	1.188429	6.65205
FD	0.490474	1.657696	0.296	0.769	-2.857311	3.838259
WH	4.366745	1.763882	2.476	0.018	0.8045126	7.928977
Gsize	0.001454	0.000753	1.931	0.06	-0.0000665	0.002974
SelfDist	0.233247	1.358377	0.172	0.865	-2.510052	2.976545
Union	1.628773	1.087984	1.497	0.142	-0.5684546	3.826001
Pleader	-0.293064	1.054267	-0.278	0.782	-2.422201	1.836072
Qleader	1.700627	1.183422	1.437	0.158	-0.6893413	4.090596
Sleader	-1.381739	1.154762	-1.197	0.238	-3.713828	0.9503501
Vleader	-0.488952	0.97508	-0.501	0.619	-2.458165	1.480261
SCScr	0.017631	0.023687	0.744	0.461	-0.0302057	0.0654669
HRScr	0.062827	0.043937	1.43	0.16	-0.0259066	0.1515599
FHScr	0.027617	0.033786	0.817	0.418	-0.0406153	0.0958501
EPScr	0.009047	0.023565	0.384	0.703	-0.0385436	0.0566374
QAScr	-0.046515	0.043562	-1.068	0.292	-0.1344899	0.04146
SOScr	-0.054188	0.039974	-1.356	0.183	-0.1349178	0.0265414

Table B.2. Weekly Sales per Square Foot, Unrestricted Sample

Source	SS	df	MS	Number of obs	141
Model	1013.999	20	50.6999385	F(20, 41)	5
Residual	1217.491	120	10.1457564	Prob > F	0
				R-squared	0.4544
Total	2231.49	140	150.939211	Adj R-squared	0.3635
				Root MSE	3.1852

	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
PopDen	0.000318	0.000141	2.26	0.026	0.0000393	0.0005959
HHInc	-1.67E-05	3.03E-05	-0.55	0.583	-0.0000767	0.0000433
SMSA	1.099328	0.781765	1.406	0.162	-0.4485126	2.647169
SellSize	-0.000128	2.36E-05	-5.438	0	-0.0001748	-0.0000815
US	2.77381	0.903201	3.071	0.003	0.9855355	4.562084
FD	1.39192	0.966928	1.44	0.153	-0.5225302	3.306371
WH	3.213255	1.414198	2.272	0.025	0.4132405	6.013269
Gsize	0.000099	0.000441	0.225	0.823	-0.0007738	0.0009717
SelfDist	-0.108153	0.766759	-0.141	0.888	-1.626282	1.409977
Union	2.343512	0.707269	3.313	0.001	0.9431694	3.743854
Pleader	1.784106	0.631705	2.824	0.006	0.5333747	3.034837
Qleader	0.235278	0.799862	0.294	0.769	-1.348393	1.818948
Sleader	1.251749	0.70632	1.772	0.079	-0.1467157	2.650214
Vleader	-0.110656	0.722835	-0.153	0.879	-1.541818	1.320507
SCScr	0.03542	0.017846	1.985	0.049	0.0000863	0.0707536
HRScr	0.047093	0.029864	1.577	0.117	-0.0120354	0.106221
FHScr	-0.020414	0.020233	-1.009	0.315	-0.0604729	0.0196451
EPScr	0.017459	0.014321	1.219	0.225	-0.0108951	0.0458124
QAScr	-0.001923	0.030467	-0.063	0.95	-0.0622442	0.0583991
SOScr	-0.015498	0.02344	-0.661	0.51	-0.0619076	0.030912
constant	5.80158	1.928981	3.008	0.003	1.982332	9.620828

Hausman test statistic for difference between restricted and unrestricted models: 222.29.
This suggests the parameter results are statistically different.

Table B.3. Sales per Labor Hour, Restricted Sample

Source	SS	df	MS	Number of obs	62
Model	29397.79	20	1469.88953	F(20, 41)	3.29
Residual	18303.76	41	446.433236	Prob > F	0.0006
				R-squared	0.6163
Total	47701.55	61	781.992675	Adj R-squared	0.4291
				Root MSE	21.129

	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
PopDen	-0.00185	0.003267	-0.566	0.574	-0.0084485	0.0047488
HHInc	0.000208	0.000407	0.51	0.613	-0.0006139	0.0010288
SMSA	-11.55289	10.24281	-1.128	0.266	-32.23866	9.132882
SellSize	0.000751	0.000402	1.871	0.068	-0.0000597	0.0015625
US	-20.06372	10.34241	-1.94	0.059	-40.95065	0.8232076
FD	-9.150823	12.67444	-0.722	0.474	-34.74738	16.44573
WH	7.252115	13.48632	0.538	0.594	-19.98406	34.48829
Gsize	-0.006919	0.005756	-1.202	0.236	-0.0185422	0.0047046
SelfDist	1.566497	10.38591	0.151	0.881	-19.40827	22.54126
Union	26.8013	8.318526	3.222	0.002	10.00169	43.6009
Pleader	-7.139506	8.060738	-0.886	0.381	-23.4185	9.139484
Qleader	1.084485	9.048227	0.12	0.905	-17.18878	19.35775
Sleader	-14.94701	8.8291	-1.693	0.098	-32.77774	2.88372
Vleader	10.07828	7.455281	1.352	0.184	-4.977964	25.13453
SCScr	-0.121249	0.181104	-0.669	0.507	-0.4869967	0.2444982
HRScr	0.173862	0.335937	0.518	0.608	-0.5045767	0.8523002
FHScr	-0.337306	0.258323	-1.306	0.199	-0.8590002	0.1843889
EPScr	0.320614	0.180174	1.779	0.083	-0.0432539	0.6844825
QAScr	0.470529	0.333066	1.413	0.165	-0.2021116	1.143169
SOScr	-0.444384	0.305636	-1.454	0.154	-1.061627	0.1728599

Table B.4. Sales per Labor Hour, Unrestricted Sample

Source	SS	df	MS	Number of obs	120
Model	44988.53	20	2249.42641	F(20, 41)	4.32
Residual	51526.19	99	520.466571	Prob > F	0
				R-squared	0.4661
Total	96514.72	119	811.048056	Adj R-squared	0.3583
				Root MSE	22.814

	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
PopDen	0.00346	0.001336	2.589	0.011	0.0008082	0.006111
HHInc	0.000149	0.00024	0.622	0.536	-0.0003269	0.0006252
SMSA	-3.784021	6.026937	-0.628	0.532	-15.74277	8.174729
SellSize	-0.00018	0.000173	-1.044	0.299	-0.000523	0.0001625
US	-7.544134	6.883207	-1.096	0.276	-21.20191	6.113642
FD	3.811093	7.361465	0.518	0.606	-10.79565	18.41784
WH	17.40229	10.87213	1.601	0.113	-4.170369	38.97494
Gsize	0.00305	0.003265	0.934	0.352	-0.0034282	0.0095281
SelfDist	-3.922164	5.907761	-0.664	0.508	-15.64444	7.800114
Union	20.10519	5.522604	3.641	0	9.147149	31.06324
Pleader	7.603953	4.776469	1.592	0.115	-1.873598	17.0815
Qleader	-2.144325	6.157682	-0.348	0.728	-14.3625	10.07385
Sleader	-4.283095	5.712505	-0.75	0.455	-15.61794	7.051754
Vleader	2.556559	5.653639	0.452	0.652	-8.661488	13.7746
SCScr	0.114545	0.134007	0.855	0.395	-0.1513544	0.3804444
HRScr	0.224849	0.239906	0.937	0.351	-0.2511758	0.7008743
FHScr	-0.084483	0.1607	-0.526	0.6	-0.403346	0.2343792
EPScr	0.183858	0.119099	1.544	0.126	-0.0524596	0.4201749
QAScr	0.285348	0.240873	1.185	0.239	-0.1925968	0.7632931
SOScr	-0.071979	0.189285	-0.38	0.705	-0.4475612	0.3036035
constant	57.80958	15.61658	3.702	0	26.8229	88.79626

Hausman test statistic for difference between restricted and unrestricted models: 376019.
This suggests the parameter results are statistically different.

Table B.5. Annual Inventory Turns, Restricted Sample

Source	SS	df	MS	Number of obs	62
Model	10904.68	20	545.234026	F(20, 41)	3.4
Residual	6581.608	41	160.527034	Prob > F	0.0005
				R-squared	0.6236
Total	17486.29	61	286.660474	Adj R-squared	0.44
				Root MSE	12.67

	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
PopDen	-0.002925	0.001959	-1.493	0.143	-0.0068819	0.0010319
HHInc	-8.69E-05	0.000244	-0.356	0.723	-0.0005794	0.0004056
SMSA	10.38803	6.142072	1.691	0.098	-2.016141	22.79219
SellSize	-0.000244	0.000241	-1.011	0.318	-0.00073	0.0002428
US	18.0926	6.2018	2.917	0.006	5.567812	30.61739
FD	-17.66709	7.600194	-2.325	0.025	-33.01599	-2.318187
WH	-1.848126	8.087036	-0.229	0.82	-18.18023	14.48397
Gsize	0.004008	0.003451	1.161	0.252	-0.002962	0.0109779
SelfDist	13.32127	6.22788	2.139	0.038	0.7438068	25.89872
Union	9.032049	4.988181	1.811	0.078	-1.041787	19.10589
Pleader	-6.046878	4.833599	-1.251	0.218	-15.80853	3.714773
Qleader	8.03493	5.425744	1.481	0.146	-2.922583	18.99244
Sleader	-3.109443	5.294345	-0.587	0.56	-13.80159	7.582704
Vleader	-6.92905	4.470539	-1.55	0.129	-15.95749	2.099386
SCScr	0.238701	0.108599	2.198	0.034	0.0193811	0.45802
HRScr	0.259868	0.201444	1.29	0.204	-0.1469561	0.6666914
FHScr	0.2412	0.154903	1.557	0.127	-0.0716326	0.5540328
EPScr	-0.294142	0.108041	-2.723	0.009	-0.5123347	-0.0759496
QAScr	-0.355453	0.199722	-1.78	0.083	-0.7588002	0.0478937
SOScr	-0.090035	0.183274	-0.491	0.626	-0.4601631	0.2800937
constant	26.6127	16.87274	1.577	0.122	-7.462502	60.68789

Table B.6. Annual Inventory Turns, Unrestricted Sample

Source	SS	df	MS	Number of obs	88
Model	3318.699	20	165.934939	F(20, 41)	2.43
Residual	4568.104	67	68.1806506	Prob > F	0.0036
				R-squared	0.4208
Total	7886.802	87	90.6529007	Adj R-squared	0.2479
				Root MSE	8.2572

	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
PopDen	-0.001403	0.000532	-2.637	0.01	-0.0024646	-0.0003409
HHInc	-0.000147	0.00011	-1.336	0.186	-0.0003657	0.0000725
SMSA	4.347022	2.924583	1.486	0.142	-1.490468	10.18451
SellSize	2.93E-06	0.00011	0.027	0.979	-0.0002158	0.0002217
US	0.782148	3.640011	0.215	0.831	-6.483344	8.047641
FD	-11.72965	3.789261	-3.095	0.003	-19.29305	-4.166255
WH	-8.884632	4.30021	-2.066	0.043	-17.46789	-0.3013775
Gsize	0.001221	0.001932	0.632	0.53	-0.0026353	0.0050773
SelfDist	5.455817	2.921906	1.867	0.066	-0.3763325	11.28797
Union	8.892669	2.516647	3.534	0.001	3.869421	13.91592
Pleader	-1.103641	2.396662	-0.46	0.647	-5.887398	3.680116
Qleader	8.906931	2.99314	2.976	0.004	2.932598	14.88126
Sleader	-3.489916	2.761606	-1.264	0.211	-9.002104	2.022273
Vleader	0.632459	2.468034	0.256	0.799	-4.293758	5.558675
SCScr	0.027276	0.055734	0.489	0.626	-0.0839693	0.138521
HRScr	0.218579	0.105414	2.074	0.042	0.0081724	0.4289862
FHScr	0.054585	0.078362	0.697	0.488	-0.1018267	0.2109959
EPScr	-0.097083	0.046864	-2.072	0.042	-0.1906243	-0.0035421
QAScr	-0.221524	0.11691	-1.895	0.062	-0.4548775	0.0118296
SOScr	-0.011718	0.084121	-0.139	0.89	-0.1796235	0.1561882
constant	23.32619	7.603198	3.068	0.003	8.15014	38.50223

Hausman test statistic for difference between restricted and unrestricted models: 22631.
This suggests the parameter results are statistically different.

Table B.7. Payroll as a Percent of Sales, Restricted Sample

Source	SS	df	MS	Number of obs	62
Model	110.4982	20	5.52490788	F(20, 41)	1.86
Residual	122.0488	41	2.97680012	Prob > F	0.0465
				R-squared	0.4752
Total	232.547	61	3.81224528	Adj R-squared	0.2191
				Root MSE	1.7253

	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
PopDen	0.000504	0.000267	1.888	0.066	-0.000035	0.0010426
HHInc	0.000038	3.32E-05	1.145	0.259	-0.0000291	0.0001051
SMSA	-1.038118	0.836403	-1.241	0.222	-2.727269	0.6510319
SellSize	4.27E-05	3.28E-05	1.301	0.201	-0.0000236	0.0001089
US	-0.479233	0.844537	-0.567	0.574	-2.184809	1.226343
FD	-0.060354	1.034964	-0.058	0.954	-2.150507	2.029799
WH	-3.122184	1.101261	-2.835	0.007	-5.346225	-0.8981433
Gsize	-0.000428	0.00047	-0.911	0.368	-0.0013773	0.000521
SelfDist	0.048532	0.848088	0.057	0.955	-1.664216	1.761281
Union	0.169268	0.679271	0.249	0.804	-1.202548	1.541083
Pleader	-1.133541	0.65822	-1.722	0.093	-2.462844	0.1957624
Qleader	-0.149535	0.738857	-0.202	0.841	-1.641686	1.342616
Sleader	0.780417	0.720963	1.082	0.285	-0.6755969	2.236432
Vleader	0.01586	0.60878	0.026	0.979	-1.213597	1.245317
SCScr	-0.021643	0.014789	-1.464	0.151	-0.0515092	0.0082229
HRScr	0.020955	0.027432	0.764	0.449	-0.0344444	0.0763549
FHScr	0.018962	0.021094	0.899	0.374	-0.023638	0.0615626
EPScr	-0.004368	0.014713	-0.297	0.768	-0.034081	0.0253443
QAScr	-0.034939	0.027197	-1.285	0.206	-0.0898648	0.0199875
SOScr	0.002675	0.024958	0.107	0.915	-0.0477276	0.0530776
constant	8.913544	2.297664	3.879	0	4.273318	13.55377

Table B.8. Payroll as a Percent of Sales, Unrestricted Sample

Source	SS	df	MS	Number of obs	146
Model	154.5585	20	7.72792324	F(20, 41)	2.02
Residual	478.9374	125	3.83149897	Prob > F	0.0105
				R-squared	0.244
Total	633.4958	145	4.3689368	Adj R-squared	0.123
				Root MSE	1.9574

	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
PopDen	9.12E-05	8.72E-05	1.045	0.298	-0.0000815	0.0002638
HHInc	2.31E-05	1.81E-05	1.275	0.205	-0.0000128	0.0000589
SMSA	-0.820637	0.469003	-1.75	0.083	-1.748851	0.1075779
SellSize	2.84E-05	1.42E-05	2.004	0.047	3.46E-07	0.0000565
US	-0.49796	0.525068	-0.948	0.345	-1.537135	0.5412155
FD	-0.389432	0.572543	-0.68	0.498	-1.522565	0.7437013
WH	-1.989344	0.862597	-2.306	0.023	-3.696529	-0.2821586
Gsize	-7.62E-05	0.000271	-0.281	0.779	-0.0006123	0.0004599
SelfDist	0.426705	0.446104	0.957	0.341	-0.4561895	1.3096
Union	0.522329	0.421467	1.239	0.218	-0.3118064	1.356465
Pleader	-0.822755	0.378174	-2.176	0.031	-1.571209	-0.0743012
Qleader	0.26364	0.49992	0.527	0.599	-0.7257627	1.253043
Sleader	-0.17208	0.445345	-0.386	0.7	-1.053473	0.709313
Vleader	-0.020356	0.426666	-0.048	0.962	-0.8647807	0.8240682
SCScr	-0.035799	0.01094	-3.272	0.001	-0.0574493	-0.0141479
HRScr	0.014772	0.017957	0.823	0.412	-0.0207669	0.0503108
FHScr	0.002126	0.012132	0.175	0.861	-0.0218845	0.0261359
EPScr	-0.002796	0.008535	-0.328	0.744	-0.0196868	0.0140951
QAScr	-0.015392	0.018878	-0.815	0.416	-0.0527538	0.0219698
SOScr	0.023053	0.016194	1.424	0.157	-0.0089959	0.0551027
constant	9.839279	1.193781	8.242	0	7.476638	12.20192

Hausman test statistic for difference between restricted and unrestricted models: 7.1636. This suggests the parameter results are not statistically different.

Table B.9. Annual Percentage Sales Growth, Restricted Sample

Source	SS	df	MS	Number of obs	62
Model	0.214393	20	0.01071963	F(20, 41)	2.65
Residual	0.165553	41	0.00403788	Prob > F	0.004
				R-squared	0.5643
Total	0.379946	61	0.00622862	Adj R-squared	0.3517
				Root MSE	0.06354

	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
PopDen	-2.48E-05	9.83E-06	-2.524	0.016	-0.0000446	-4.96E-06
HHInc	-2.39E-07	1.22E-06	-0.195	0.846	-2.71E-06	2.23E-06
SMSA	0.040441	0.030805	1.313	0.197	-0.0217701	0.1026527
SellSize	2.79E-07	1.21E-06	0.231	0.819	-2.16E-06	2.72E-06
US	0.028994	0.031104	0.932	0.357	-0.0338225	0.0918103
FD	-0.01022	0.038118	-0.268	0.79	-0.0872004	0.0667603
WH	-0.069273	0.040559	-1.708	0.095	-0.1511845	0.0126383
Gsize	-5.63E-05	1.73E-05	-3.254	0.002	-0.0000913	-0.0000214
SelfDist	0.112117	0.031235	3.589	0.001	0.049036	0.1751971
Union	0.024153	0.025018	0.965	0.34	-0.0263711	0.0746768
Pleader	0.028783	0.024242	1.187	0.242	-0.020175	0.0777415
Qleader	0.049997	0.027212	1.837	0.073	-0.0049591	0.1049528
Sleader	-0.030904	0.026553	-1.164	0.251	-0.0845291	0.0227209
Vleader	0.016485	0.022421	0.735	0.466	-0.0287958	0.061766
SCScr	0.000778	0.000545	1.429	0.161	-0.0003218	0.0018781
HRScr	-0.000569	0.00101	-0.563	0.576	-0.0026094	0.0014714
FHScr	0.000476	0.000777	0.613	0.543	-0.0010929	0.0020451
EPScr	-0.000295	0.000542	-0.545	0.589	-0.0013897	0.0007989
QAScr	-0.001048	0.001002	-1.047	0.301	-0.0030714	0.0009745
SOScr	0.000139	0.000919	0.151	0.881	-0.0017177	0.0019949
constant	1.019599	0.084623	12.049	0	0.8486999	1.190499

Table B.10. Annual Percentage Sales Growth, Unrestricted Sample

Source	SS	df	MS	Number of obs	128
Model	0.371811	20	0.01859054	F(20, 41)	3.3
Residual	0.602892	107	0.00563451	Prob > F	0
				R-squared	0.3815
Total	0.974703	127	0.00767483	Adj R-squared	0.2658
				Root MSE	0.07506

	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
PopDen	5.82E-06	3.45E-06	1.687	0.095	-1.02E-06	0.0000127
HHInc	1.52E-06	7.60E-07	1.999	0.048	1.25E-08	3.03E-06
SMSA	0.003438	0.01936	0.178	0.859	-0.0349414	0.0418169
SellSize	-1.13E-06	5.59E-07	-2.03	0.045	-2.24E-06	-2.67E-08
US	0.00943	0.022037	0.428	0.67	-0.0342553	0.0531154
FD	0.011631	0.027544	0.422	0.674	-0.0429729	0.0662343
WH	-0.072871	0.035188	-2.071	0.041	-0.1426274	-0.0031142
Gsize	-2.38E-05	0.000011	-2.157	0.033	-0.0000457	-1.92E-06
SelfDist	0.022031	0.020407	1.08	0.283	-0.0184235	0.0624844
Union	0.008623	0.017368	0.496	0.621	-0.0258066	0.0430522
Pleader	0.040094	0.01537	2.609	0.01	0.0096247	0.0705642
Qleader	0.039484	0.019908	1.983	0.05	0.0000196	0.0789486
Sleader	-0.028266	0.017476	-1.617	0.109	-0.0629094	0.0063768
Vleader	0.015933	0.018715	0.851	0.396	-0.0211681	0.0530333
SCScr	0.000466	0.00045	1.034	0.303	-0.0004269	0.001358
HRScr	-0.001364	0.000766	-1.782	0.078	-0.0028824	0.0001536
FHScr	0.000544	0.000526	1.034	0.304	-0.0004993	0.0015879
EPScr	0.00014	0.000354	0.395	0.694	-0.000562	0.0008417
QAScr	-0.000496	0.00078	-0.636	0.526	-0.0020431	0.0010511
SOScr	-0.000663	0.000571	-1.163	0.247	-0.0017943	0.0004675
constant	1.021216	0.053954	18.928	0	0.9142595	1.128173

Hausman test statistic for difference between restricted and unrestricted models: 7.216e-06.
This suggests the parameter results are not statistically different.

Appendix C
Sample Benchmark Report

In June 2000 each store in the Panel received a confidential benchmark report comparing it to peer stores similar in format and size. This was the primary reward for participation.

A sample benchmark report is reproduced on the pages that follow. This report was prepared for a store that was classified as Conventional. As explained in the cover letter, the peer group for this store was stores ranging in size from 19,000 to 23,000 square feet.

The first section of the report compares the store's scores for the six management area indices – supply chain practices, human resource practices, food handling, environmental practices, quality assurance, and service offerings – to the median scores for the peer group. A seventh index, operating efficiency, was also included in the report, but this store did not provide the information needed to compute all components of this index.

The remainder of the report presents question-by-question comparisons of the stores responses to those of its peers. The store's responses are noted by bold face type. Questions for which the store's responses are "unusual" relative to those of its peers, are marked with a check mark in the right-hand margin. For example, in question 1, the sample store is one of only 12% of peer stores that has used electronic data interchange (EDI) for more than two years. This distinguishes it from other stores in its peer group. Similarly, in question 3, the fact that this store has ten check stands distinguishes it from peer stores, which have a median of only six.

The benchmark report provides detailed, highly personalized feedback to stores in the Panel.

2000 Supermarket Panel Benchmark Report

The Retail Food Industry Center

University of Minnesota
Department of Applied Economics
317 Classroom Office Building
1994 Buford Avenue
St. Paul, MN 55108-6040
Phone: 612-625-7019 Fax: 612-625-2729
URL: http://trfic.umn.edu

Questions about your Benchmark Report?
Contact:

Jon Seltzer
Supermarket Panel Project Manager

Phone: 612-926-4602 Fax: 612-926-3933
e-mail: seltz004@tc.umn.edu

JON SELTZER
THE RETAIL FOOD INDUSTRY CENTER
1994 BUFORD AVE
ST. PAUL, MN 55108

University of Minnesota

Twin Cities Campus

The Retail Food Industry Center

Department of Applied Economics
College of Agricultural, Food,
and Environmental Sciences

317 Classroom Office Building
1994 Buford Avenue
St. Paul, MN 55108-6040

612-625-7019
Fax: 612-625-2729

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National Grocers Association

2000 Supermarket Panel Benchmark Report

Prepared for: Jon Seltzer
The Retail Food Industry Center
1994 Buford Ave
St. Paul, MN 55108

November 27, 2000

Dear Jon:

Thank you for participating in the 2000 Supermarket Panel. The Panel is designed to provide you with information on the impact of specific operating practices in different competitive environments.

The enclosed benchmark report compares your store with all others in your peer group. Your report begins with summary information for seven areas of management interest:

- Supply Chain
- Human Resources
- Food Handling
- Environmental Practices
- Quality Assurance
- Service Offerings
- Operating Efficiency

Your practices in many of the areas of management interest are similar to those of stores in your peer group. You may want to take this opportunity to examine your policies with regard to Food Handling. Considering the entire questionnaire, your responses differ most from those of stores in your peer group in Store Financial, questions 44-53.

Peer groups are similar sized stores in one of several different marketing formats (Conventional, Superstore or upscale, Food / Drug combination, and Warehouse store / Super warehouse). *You did not respond to question 37, which asked for your store's format. Based on other characteristics of your store, we*

constructed a peer group for this report that consists of Conventional stores which range in size from 19 thousand to 23 thousand square feet. If this peer group is not appropriate for your store or you would like to see another comparison, please let us know immediately. If possible, we will prepare a follow-up benchmark report with a revised peer group.

In the first section of the report, responses in each management area are combined into a score that can range between 0 and 100%. The higher your score, the more of the "characteristics" you have adopted. A high score may not be the ideal target for your store. The score shown under "Peer Group Score" is the median value (half the responses larger, half smaller) for stores in your peer group. This may be your most meaningful basis for comparison.

The remainder of your benchmark report presents question-by-questions comparisons between your store's practices and characteristics and those of stores in your peer group.

For more information on interpreting this portion of your report, see the one-page guide titled "How to Read the Benchmark Report" at the beginning of the second section.

Your participation in the Panel is important, and we want it to be a valuable resource for you. Please contact Jon Seltzer if you have any questions about this report, or if there are changes in the areas of interest and benchmark comparisons that would make it more useful for you.

Jon Seltzer
Supermarket Panel Project Manager

TELEPHONE 612-926-4602
FAX 612-926-3933
e-mail seltz004@tc.umn.edu

Before you turn to your benchmark report ... in the early fall we will have a full analysis of the results of this year's Panel. The initial results indicate that we have good representation of large and small stores, chain and independents, and stores from all parts of the country, fully reflecting the breadth of the retail food industry.

Once again, thank you for your participation.

Summary Information for Key Management Areas

Area		Peer Group Score	Your Score
Supply Chain	This index measures progress in implementing Supply Chain initiatives. It has two distinct dimensions which are combined to give a single score: • Use of technology (questions 1d, 1e, 1f, 1j, 1k, 1m and 1n, and 6g). • The role of various supply chain members in making marketing decisions: it assesses the degree to which pricing, advertising, promotions, merchandise display and space allocation in produce, dry cereal, DSD snacks and diary are the responsibility of different parties in the supply chain. (question 18). A higher value indicates that your store is further along in implementing Supply Chain initiatives		
	Your score is typical of stores in your peer group.	**47**	**56**
Human Resources	This index measures your adoption of more progressive human resource practices. It has four components which are combined into a single score: • Employee training • Proportion of full time to total employees • Use of incentive-based compensation • Types of non-cash compensation A higher value indicates greater adoption of progressive human resource policies.		**Not Enough Data**

Summary Information for Key Management Areas

Area		Peer Group Score	Your Score
Food Handling	This index is based on your responses to the questions in the Food Handling Section of the questionnaire. • For all departments other than Frozen Foods, is the target temperature low enough (q39)? • Do you check the temperature in each department often enough (q39)? • Do you conduct store sanitation and 3rd party commercial audits often enough (q40)? • What dating information do you include (q41)? • Are your inventory rotation policies appropriate (q42)? • Do you require employees to be trained in proper handling techniques (q43)? A higher value indicates better food quality/handling practices. *This may be an area of opportunity for improving your practices.	**87**	**73***
Environmental Practices	This index reflects your adoption of "environmentally friendly" practices. It has two aspects: • Consumer oriented environmental policies (questions 6e, 6m, and 6r) • Operations oriented environmental policies (questions 1g, 1*i* and 1o). A higher value indicates greater adoption of environmentally friendly practices. Your score is typical of stores in your peer group.	**75**	**67**

Summary Information for Key Management Areas

Area		Peer Group Score	Your Score
Quality Assurance	This index measures your adoption of quality assurance practices in three areas: • Use of instruments that assess customer satisfaction (questions 1a, 1b and 1i). • Perishables excellence (q38b) • Food handling practices regarding temperature checks, sanitation audits, inventory rotation, and food safety training. A higher value indicates greater attention to quality assurance. Your score is typical of stores in your peer group.	**73**	**82**
Service Offerings	This index measures the breadth of customer service your store provides. It is based on your responses to questions 6b-6d, 6f, 6h-6k, 6n, 6o, 6u, 6v, and 38a. A higher value indicates that your store offers a wider range of services. Your score is typical of stores in your peer group.	**54**	**54**
Operating Efficiency	This measures overall efficiency of your store operations. It is based on three commonly used efficiency indicators. • Sales/Labor Hour • Sales/Square Foot of Selling Area • Inventory Turns A higher value indicates that your store can compete more effectively on price.		**Not Enough Data**

28. There are 2 types of answers.
    a. Percentages: these numbers indicate the percentage of peer group stores that selected a specific response. The percentage is based on all peer group stores that answered this question.
    b. Averages: these are numbers without "%" signs, and are based only on the peer group stores that answer a question. These numbers are not means but medians, so half of the peer group stores (that answered this question) gave answers that are larger, and half gave answers that are smaller.

29. Numbers in **bold face** indicate answers for your store.

30. Check marks indicate an unusual answer in that row, and asterisks further indicate which answer is unusual. For a percentage, an unusual answer is one that you did not choose but that at least 80% of peer group stores did choose; or that you chose but that no more than 20% of peer group stores chose. For a numerical answer, " unusual" means that it is far from the peer group average.

31. EXAMPLE 1: Consider the following sample response to Q1 on Page 1 by a hypothetical store.

Q1.**To what extent are the following practices actively used in your store?** (*Respondents circled ONE answer for each item.*)

	Used for More Than 2 Years	Used for 1-2 Years	Started in Past Year	Plan to Start Next Year	No Plans to Use	Don't Know	
a. Customer focus groups		12%		12%	**45%**	31%	
b. Customer satisfaction surveys	**42%**	25%	7%	7%	5%	14%	
c. Customer self-scanning	11%	7%	7%	7%	11%	**57%**	
d. Electronic Data Interchange	16%	**7%***		17%	10%	49%	✔

Twelve percent of stores in the peer group have used focus groups for between one and two years, 12% have used them for less than one year, and 31% percent of store managers in this peer group do not know what company plans are for using focus groups. The bold face indicates that this store is among the 45% of stores in the peer group that have no plans to use customer focus groups. In the last row, we see that this store is among the **7%** of stores in the peer group that have used electronic data interchange for between one and two years. In this regard it belongs to an unusually small group of stores, and this is indicated both by the asterisk next to the response, and by the check mark on the right.

32. EXAMPLE 2: Consider the following response to Q2 on Page 1 by a hypothetical store.

Q2. **How many EXPRESS check stands are there?** 1 / **2*** EXPRESS check stands ✔

Stores in this store's peer group have an average of 1 express check stand. The **2** in bold face indicates that this store has 2 express check stands. The asterisk and check mark indicate that this is an unusually high number of express check stands for this peer group.

Q1. To what extent are the following practices actively used in your store? *(Respondents circled ONE answer for each item.)*

		Used for More Than 2 Years	Used for 1-2 Years	Started in Past Year	Plan to Start Next Year	No Plans to Use	Don't Know	
a.	Customer focus groups		16%		8%	52%	24%	
b.	Customer satisfaction surveys	**35%**	27%	8%	4%	8%	19%	
c.	Customer self-scanning					**81%**	19%	
d.	Electronic Data Interchange (EDI)	**12%***	12%	4%	8%	20%	44%	✔
e.	Electronic-assisted receiving	**35%**	4%	15%	15%	15%	15%	
f.	Electronic shelf tags	19%		4%		38%	**38%**	
g.	Energy efficient lighting	54%	12%	4%	12%	12%	**8%***	✔
h.	In-store electronic coupons	**35%**	15%	8%	8%	31%	4%	
i.	Mystery shopper programs	**46%**	15%	4%	4%	23%	8%	
j.	Pay on scan	27%	8%		8%	19%	**38%**	
k.	Product movement analysis / Category management	58%	12%	12%	8%	8%	**4%***	✔
l.	Refrigeration management program	56%	8%	8%	12%	8%	**8%***	✔
m.	Scanning data used for automatic inventory refill	4%			4%	**81%**	12%	
n.	Shelf-space allocation plan-o-grams	**58%**	17%	4%	4%	13%	4%	
o.	Store waste recycling	**65%**	19%	8%		8%		
p.	Web site	**12%***	15%	19%	23%	12%	19%	✔

Q2. How many EXPRESS check stands are there? 1 / **2*** EXPRESS check stands ✔

Q3. How many TOTAL check stands are there (including express)? 6 / **10*** check stands TOTAL ✔

Q4. How many hours per week are all check stands in use? 13 / **4** hours per week

Q5. How many hours per week is the store open? (168 maximum) 105 / **119*** hours per week ✔

Q6. How would you rate use of the following practices in your store? *(Respondents circled ONE answer for each item.)*

		Key Competitive Advantage	Standard Offering	Plan to Discontinue	Considering Introduction	Not Used, No Plan to Offer	
a.	Advertise Every Day Low Prices (EDLP)	23%	**50%**		8%	19%	
b.	Bagging service	46%	**54%**				
c.	Carryout service	50%	**50%**				
d.	Custom meat cutting/service meats	38%	**46%**		4%	12%	
e.	Environmentally-friendly products	4%	**73%**		8%	15%	
f.	Fax ordering by customer	8%	19%	4%	15%	**54%**	
g.	Frequent shopper/Loyalty card program	23%	12%		27%	**38%**	
h.	Fresh Prepared Foods	35%	**54%**	4%		8%	
i.	Hot meals or meal components (HMR)	27%	**54%**	8%	4%	8%	
j.	HMR meals - special checkout lane		15%		4%	**81%**	
k.	Internet ordering by customer				19%	**81%**	
l.	Newspaper ads with coupons	35%	**54%**			12%	
m.	Organic	8%	**27%**		19%	46%	
n.	Pharmacy, prescriptions	8%	4%		19%	**69%**	
o.	Post office, mailing services	16%	4%		8%	**72%**	
p.	Private label program-own brand	**58%**	38%			4%	
q.	Purchase triggered electronic coupons	15%	**31%**		12%	42%	
r.	Recycling (cans, glass, plastic)	12%	**50%**		15%	23%	
s.	Rest rooms for customers	15%	**73%**		8%	4%	
t.	Seating for eating / Customer rest areas	4%	23%		19%	**54%**	
u.	Teller banking/in-store banking	12%	**12%***		19%	58%	✔
v.	Video department	8%	27%	4%	12%	**50%**	

Q7. What is the approximate number of parking spaces EXCLUSIVE to your store?

97 / **100** Number of parking spaces exclusive to your store

Q8. Approximately how many TOTAL parking spaces are there (exclusive and shared)?

125 / **300*** TOTAL number of parking spaces ✔

Q9. What is the approximate size of the SELLING AREA in your store? 20000/**21000** sq. ft.

Q10. Approximately, what is the TOTAL size of your store (selling area and backroom)? 26000/**30000*** TOTAL SIZE of your store (sq. ft.) ✔

Q11. In what year was the store originally constructed? (Approximately) 1975/**1987**

Q12. In what year was the store 1st operated under its current name? (Approximately) 1987/**1987**

Q13. Has your store ever had a major remodeling (significant new equipment or new departments, or store dimensions changed)?

33. YES 72%
34. NO **16%***
35. Not sure or don't know 12%

IF YES: What was the year of the most recent MAJOR remodeling? 1993 ✔

Q14. Has your store ever had a minor remodeling (some equipment change or replacement but no new departments or change in store dimensions)?

1. YES 73%
2. NO **19%***
3. Not sure or don't know 8%

IF YES: What was the year of the most recent MINOR remodeling? 1997 ✔

Q15. Approximately how many stores are owned by the same company that owns your store? 6 / **1187*** ✔

IF 10 stores or less ➜ Is the manager's equity ownership in <u>THIS STORE</u> at least 20%?

1. YES 21%
2. NO 71%
3. Not sure or don't know 7%

Q16. What is the relationship between this store and its primary warehouse or major supplier?

1. The warehouse is a wholesaler or cooperative 77%
2. The store and the warehouse are part of the same company (including wholesaler owned store) **23%**
3. Not sure or don't know

Q17. Does your store participate in a cooperative or wholesaler-sponsored ad group or franchise program? ✔

1. YES 58%
2. NO **15%***
3. Not sure or don't know 27%

Q18. For each of the products listed below, please indicate who has PRIMARY responsibility for each of the functions listed. *(Respondents circled ALL that apply: row totals may exceed 100%.)*

Decision Makers	MANAGER	DEPARTMENT HEAD	OTHER STORE PERSONNEL	WHOLESALER	CHAIN HEADQUARTERS OR REGION	INDEPENDENT AD GROUP	CATEGORY MANAGER	VENDOR OR BROKER	OTHER OUT-OF-STORE PERSONNEL	
APPLES										
Pricing	42%	**42%**	4%	15%	38%	8%	4%	4%	4%	
Advertising	27%	15%		12%	**46%**	23%			4%	
Space Allocation	38%	**62%**	4%	4%	15%		12%	4%	8%	
Display Merchandising	46%	**65%**	4%	4%	15%		4%			
Promotions	35%	38%	12%	12%	**42%**	8%			4%	
DRY CEREAL										
Pricing	42%	12%	8%	23%	**35%**	8%	4%			
Advertising	38%	4%	4%	12%	**50%**	19%		4%		
Space Allocation	65%	35%		8%	**27%**		12%			
Display Merchandising	69%	**35%**	4%	4%	15%		4%			
Promotions	50%	19%	8%	19%	**42%**	8%		8%		
DSD SNACKS										
Pricing	50%	4%	4%	12%	**38%**	4%	4%	15%		
Advertising	42%		4%	12%	**54%**	12%		8%		
Space Allocation	65%	**19%***		4%	**35%**		8%	8%		✔
Display Merchandising	65%	27%	**4%***		15%			27%		✔
Promotions	50%	15%	4%	4%	**46%**	4%		31%		
FLUID MILK										
Pricing	50%	15%	4%	15%	**46%**		4%	4%		
Advertising	35%	12%	4%	15%	**46%**	15%				
Space Allocation	62%	**42%**	4%	8%	**27%**		8%	4%		
Display Merchandising	54%	**46%**	8%	8%	**19%***			8%		✔
Promotions	42%	23%	4%	23%	**42%**	8%		12%		

For a typical new-hire in each of the following positions, how many hours of training (classroom or one-on-one supervision) are given for the following? Answers should be cumulative; i.e., include "Training hours during week 1 of employment" in the total for "Training hours during weeks 1-26 of employment," and so forth. *(A zero indicates no classroom or one-on-one, supervised training)*

Number of Hours of Training for a New Hire ***(classroom or one-on-one supervision)***		During Week 1 of Employment	During Weeks 1-26 of Employment	During Weeks 1-52 of Employment	
Q19.	Cashier	15 / **16**	20 / **16**	20 / **16**	
Q20.	Deli	16 / **30***	24 / **30**	24 / **30**	✔
Q21.	Elsewhere in the Store	14	20	20	

		Full Time		Part Time		
Q22.	In an average week, how many employee hours do you schedule Full Time and Part Time?	760	hrs/wk	650	hrs/wk	
Q23.	CURRENTLY, how many employees are working in the store, Full Time and Part Time?	18 / **35***		34 / **75***		✔
Q24.	12 MONTHS AGO, what was the number of employees working in the store, Full Time and Part Time?	18 / **30***		36 / **70***		✔

Q25. Approximately how many Full Time and Part Time employees started working at this location in the last 12 months (whether or not they are still with your store or company)? ✔

15 / **30*** new hires in the last 12 months

1 / **5*** transfers from other locations in your company in the last 12 months

Q26. Are 25% or more of your employees covered by a collective bargaining agreement?

1. YES 20%
2. NO **80%**

The next several questions ask how you compensate different types of employees. Please circle Yes, No or DK (Don't Know) for each question below.

Q27. Please indicate which of the items below are typically a part of the compensation of

		Store Managers			Department Heads			
		YES	**NO**	**DK**	**YES**	**NO**	**DK**	
a.	Salary	**96%**	4%		**54%**	46%		
b.	Annual Bonus	80%	**20%**		64%	**36%**		
c.	Hourly Wage	9%	**91%**		**73%**	27%		
d.	Individual Performance Incentive Pay	**28%**	72%		**20%**	80%		
e.	Incentive Pay Based on Product or Category Performance	**24%**	72%	4%	**24%**	76%		
f.	Employee Stock Ownership Plan	28%	**72%**		25%	**75%**		
g.	Individual Health Insurance	**96%**	4%		**92%**	8%		
h.	Family Health Insurance	**88%**	12%		**88%**	12%		
i.	Disability Insurance	**73%**	27%		**68%**	32%		
j.	Pension	**42%**	58%		**46%**	54%		
k.	401(k) Plan	**62%**	38%		**58%**	42%		

Q28. Please indicate which of the items below are typically a part of the compensation of

		Other Full Time Personnel			Part Time Personnel			
		YES	**NO**	**DK**	**YES**	**NO**	**DK**	
a.	Salary	8%	**92%**		4%	**96%**		
b.	Annual Bonus	16%	**84%**		4%	**96%**		
c.	Hourly Wage	**100%**			**96%**	4%		
d.	Individual Performance Incentive Pay	19%	**81%**		8%	**92%**		
e.	Incentive Pay Based on Product or Category Performance	15%	**85%**		8%	**92%**		
f.	Employee Stock Ownership Plan	19%	**81%**		20%	**80%**		
g.	Individual Health Insurance	**84%**	16%		**36%**	64%		
h.	Family Health Insurance	**73%**	27%		**16%***	84%*		✔
i.	Disability Insurance	**60%**	40%		**25%**	75%		
j.	Pension	**40%**	60%		**17%***	83%*		✔
k.	401(k) Plan	**54%**	46%		**32%**	68%		

The next set of questions concerns the three stores that compete most strongly with your store for customers, whether or not they belong to your company or ad group.

		Your Store	Competitor #1	Competitor #2	Competitor #3	
Q30.	**Distance from your store in miles**	XXXX	3 / **5** mi.	4 / **5** mi.	5 / **5** mi.	
Q31.	What is the competitive sales rank of each of these stores CURRENTLY? (1 - 4: Leader = 1)	3 / **4**	1 / **1**	3 / **2***	4 / **3**	✔
Q32.	What was the competitive sales rank of each of these stores LAST YEAR? (1 - 4: Leader = 1)	3 / **4***	1 / **1**	3 / **2***	3 / **3**	✔
Q33.	Which ***ONE*** of these 4 stores is the PRICE LEADER?	14%	41%	23%	23%	
Q34.	Which ***ONE*** of these is the SERVICE LEADER?	54%	25%	13%	8%	
Q35.	Which ***ONE*** of these is the QUALITY LEADER?	62%	**19%***	10%	10%	✔
Q36.	Which ***ONE*** of these is the VARIETY LEADER?	**25%**	38%	21%	17%	
Q37.	**Please indicate each store's MARKETING FORMAT.** *(Respondents selected ONE per store.)*					
	Conventional	100%*	32%	42%	18%	✔
	Superstore or upscale		36%	21%	29%	
	Food / Drug combo (Albertsons, Smitty's)		8%	8%	6%	
	Warehouse / Super warehouse (Cub, Xtra)		8%	8%	6%	
	Hypermarket / Supercenter (Kmart, Wal*Mart, Fred Meyer, Meijer)		4%	4%	24%	
	Limited assortment store (Aldi, Sav-A-Lot)		4%	17%	12%	
	Convenience store (w/ or w/o gasoline)					
	Wholesale club (Costco, Sam's Club, BJ's)					
	Mini-club (Smart&Final, MegaWarehouse)					
	Deep discount drug (Phar-Mor, Drug Emporium)					
	Internet (Peapod, Net Grocer, Webvan)					
	Mass merchant / Discount (Traditional Kmart, Wal*mart, Target)		8%		6%	
	Category killer (PET Food Warehouse, Office Max)					
	Other					

Q38. Please indicate each store's MARKETING PROGRAMS below.

		Your Store	Competitor #1	Competitor #2	Competitor #3	
a.	Strong Service	**96%**	**42%**	**42%**	**23%**	
b.	Perishables Excellence	**96%**	**77%**	**58%**	**46%**	
c.	Bagging	**88%**	**46%**	**50%**	**27%**	
d.	Parcel Pickup	8%	15%	19%	15%	
e.	Frequent Shopper Program	35%	35%	35%	15%	
f.	Heavy Private Label Program	**88%**	85%*	69%	**50%**	✔
g.	Open 24 Hours	12%	62%	46%	**35%**	
h.	Store Coupons	96%*	62%	62%	46%	✔
i.	Low Prices	**65%**	77%	65%	**54%**	
j.	Every Day Low Prices (EDLP)	62%	73%	65%	46%	
k.	High/Low Advertising	**69%**	**54%**	**42%**	**27%**	
l.	Advertising Driven	**77%**	65%	65%	**42%**	
m.	Home Shopping	23%	8%	4%		
n.	Other	12%	8%			

Q39. How frequently are display case temperatures checked for the following departments? *(For each department, respondents filled in the target temperature and chose **ONE** answer to indicate frequency.)*

					How often is temperature checked?			
	Department	Does not apply	Display case target temperature	Less than once per week	At least once per week, less than once per day	At least once per day	Checked whenever automatic alarm goes off	
a.	Meat (self service)	4%	35 / **38**		13%	**83%**	4%	
b.	Dairy		37 / **38**		12%	**76%**	12%	
c.	Deli (self service)	4%	38 / **38**	4%	8%	**79%**	8%	
d.	Frozen		10 / **0***	4%	4%	**76%**	16%	✔

Q40. How often is your store inspected for food sanitation by the following? *(Respondents chose **ONE** answer for each item.)*

	Does not apply	Once per year	More than once per year, less than once per month	Once per month	More than once per month	
a. Self audit	4%		20%	32%	48%	
b. Local authority	4%	**40%**	44%	12%	4%	
c. 3rd party	**46%**	31%	38%	23%	8%	

Q41. For each product listed below, please indicate what type of dating information is on the package by circling one of the numbers, and who determines the date (if any) by circling one of the letters. *(Respondents chose one answer for dating information, and one for who determines the dating information, if applicable.)*

Perishable Product	Does Not Apply	None	Sell by date	Use by date	Other	Determined by manufacturer or processor	Determined at store level or company HQ
a. Meat (Poultry)		**85%**	15%			76%	
b. Meat (Red meat)		**88%**	12%			**95%**	
c. Meat (Seafood)	15%	**69%**	15%			10%	**71%**
d. Deli		**81%**	15%	4%		76%	

Q42. For each of the following areas, please circle all the inventory rotation or stocking policies that apply.

Department	Does not apply	Replace when depleted	Restock as needed into the rear	Restock, no rotation	Other
a. Meat (self service)	4%	8%	**85%**		4%
b. Dairy		15%	**81%**		4%
c. Deli (self service)		12%	**85%**		4%
d. Frozen		12%	**73%**	12%	4%

Q43. Is a food safety training course required, either by company policy or regulation, for:

	Does Not Apply	**Yes**	**No**	**Don't Know**
a. **Deli Manager?**	8%	**81%**	12%	
b. **Deli Employees?**	8%	46%	**42%**	4%
c. **Meat Department Employees?**	8%	65%	**23%**	4%

The next set of questions asks for information about three individual departments and for the store as a whole.

		Produce	Meat	Grocery	Total Store	
Q44.	Approximately, how much are PRIVATE LABEL SALES as a percentage of total sales in Grocery and Total Store? (Please include STORE BRAND BREAD in the TOTAL STORE but not in GROCERY)	X	X	13 / **15**	11 / **15**	
Q45.	In each column, how much are average weekly sales as a percentage of total store sales?	7 / **9***	13 / **10**	53 / **71***	100%	✔
Q46.	What is the AVERAGE NUMBER of DSD DELIVERIES per week in each department and for the whole store?	3 / **5**	4 / **5**	43 / **5***	50 / **5***	✔
Q47.	What is the AVERAGE NUMBER of non-DSD DELIVERIES per week in each department and for the whole store?	3 / **5***	3 / **5***	4 / **3**	12	✔
Q48.	What is the number of ANNUAL INVENTORY TURNS for each department and the TOTAL STORE?	47 / **26***	40 / **26**	15 / **3***	15	✔

		Most Recent Complete Fiscal Year	Previous Fiscal Year	
Q49.	**Ending Date of Fiscal Year**	6/99	X	
Q50.	**What were AVERAGE WEEKLY STORE SALES?**	$ 125000	$115000	
Q51.	**What was the AVERAGE NUMBER OF CUSTOMER TRANSACTIONS PER WEEK?**	8400	8186	
Q52.	**What was the AVERAGE GROSS PROFIT as a PERCENTAGE of SALES?**	23 %	22 %	
Q53.	**What was AVERAGE PAYROLL as a PERCENTAGE of SALES?**	10 / **9** %	10 / **9** %	